

TEST REPORT

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China
Report Number: 2501T61540E-RF-00
FCC ID: 2ASNSRM15

Test Standard (s)

FCC PART 80

Sample Description

Product Type: Two Way Radio
Model No.: RM15
Multiple Model(s) No.: RA26, RM22
Trade Mark: RETEVIS
Date Received: 2025/07/18
Issue Date: 2025/09/11

Test Result:	Pass▲
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▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

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Bruce Ling
RF Engineer

Approved By:

Nancy Wang

Nancy Wang
RF Supervisor

Note: The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501T61540E-RF-00	Original Report	2025/09/11

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Two Way Radio
Tested Model	RM15
Multiple Model(s)	RA26,RM22
Product Category	Portable VHF Ship Station
Frequency Range	156.05-157.425MHz
Rated Transmit Power	6Watts(High), 3Watt(Middle), 1Watt(Low)
Channel separation	25kHz
Modulation Technique	FM
Emission Type	G3E
DSC Function	Not Support
AIS Function	Not Support
Antenna Specification [#]	2.0dBi (provided by the applicant)
Voltage Range	DC 7.4V from battery or DC 5V from USB Port/Charger
Sample serial number	36QX-2 (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A
Charger Information	Model: RM15 Input : DC 5V, 2000mA Output : DC 5V, 2000mA
Note: The Multiple models are electrically identical with the test model except for model name and sales channels. Please refer to the declaration letter [#] for more detail, which was provided by manufacturer.	

Objective

This test report is in accordance with Part 2 and Part 80 of the Federal Communication Commission rules.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2, Sub-part J as well as the following individual parts:

Part 80 - Stations in the Maritime Services

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		109.2kHz(k=2, 95% level of confidence)
RF Frequency		56.6Hz(k=2, 95% level of confidence)
RF output power, conducted		0.86dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.60dB(k=2, 95% level of confidence)
Audio Frequency Response		0.1dB
Low Pass Filter Response		1.2dB
Modulation Limiting		1%
Radiated Emissions	30MHz~200MHz (Horizontal)	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.73dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.34dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.40dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.64dB(k=2, 95% level of confidence)
Temperature		±1°C
Humidity		±1%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a test mode which has been done in the factory.

Channel	Transmit Frequency (MHz)	Receive Frequency (MHz)	Channel Number	Transmitting Frequency (MHz)	Receiving Frequency (MHz)
01A	156.050	156.050	27	157.350	161.950
05A	156.250	156.250	28	157.400	162.000
6	156.300	156.300	63A	156.175	156.175
07A	156.350	156.350	65A	156.275	156.275
8	156.400	156.400	66A	156.325	156.325
9	156.450	156.450	67*	156.375	156.375
10	156.500	156.500	68	156.425	156.425
11	156.550	156.550	69	156.475	156.475
12	156.600	156.600	71	156.575	156.575
13*	156.650	156.650	72	156.625	156.625
14	156.700	156.700	73	156.675	156.675
15		156.750	74	156.725	156.725
16	156.800	156.800	77*	156.875	156.875
17*	156.850	156.850	78A	156.925	156.925
18A	156.900	156.900	79A	156.975	156.975
19A	156.950	156.950	81A	157.075	157.075
20A	157.000	157.000	82A	157.125	157.125
21A	157.050	157.050	83A	157.175	157.175
22A	157.100	157.100	84	157.225	161.825
23A	157.150	157.150	85	157.275	161.875
24	157.200	161.800	86	157.325	161.925
25	157.250	161.850	87	157.375	157.375
26	157.300	161.900	88A	157.425	157.425

Note:

1. The channel frequency plan for USA maritime radio communications, based on the 25 kHz channel spacing, is set forth in §80.373(f).
2. All above channels support high, middle and low power level, except the channels mark with '*' are only low power level.
3. The channels in bold was tested in the report.

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

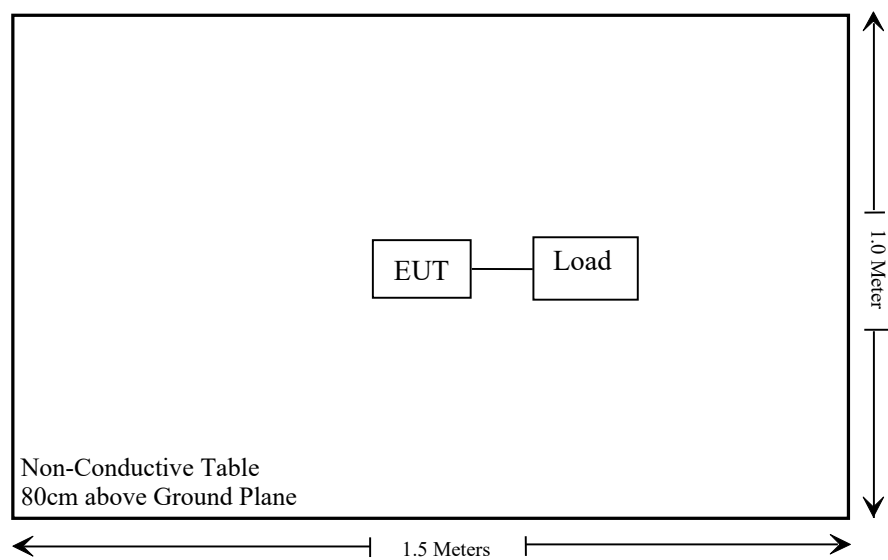
Manufacturer	Description	Model	Serial Number
Unknown	Load	Unknown	Unknown

External I/O Cable

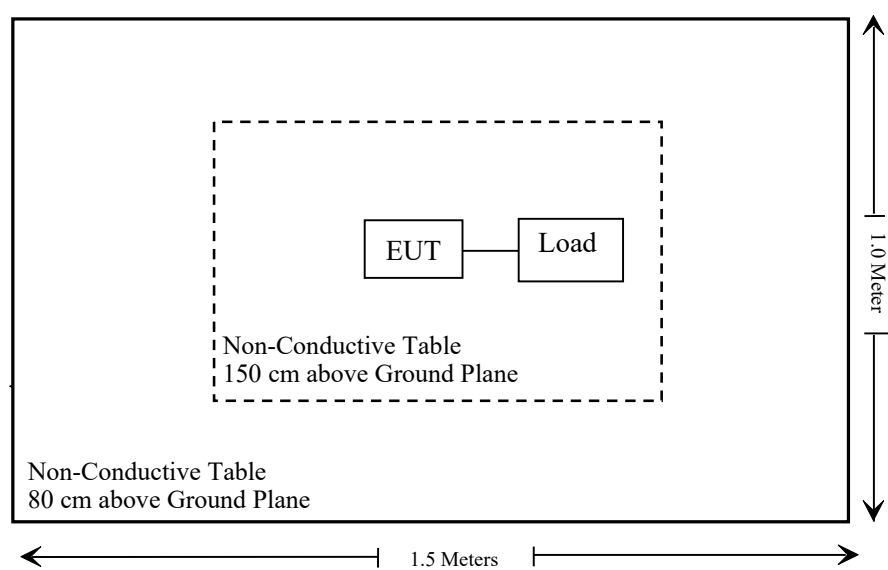
Cable Description	Length (m)	From Port	To
RF Cable	0.5	EUT	Load

Block Diagram of Test Setup

Below 1GHz of Radiated Emissions



Above 1GHz of Radiated Emissions



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§2.1055; §80.209	Transmitter Frequency Tolerances	Compliant
§2.1047; §80.213	Modulation Requirements	Compliant
§2.1046; §80.215	Transmitter Power	Compliant
§2.1049; §80.205, §80.211	Bandwidth And Emission Mask	Compliant
§2.1051; §80.211	Transmitter Unwanted Emissions(Conducted)	Compliant
§80.217	Suppression of Interference Aboard Ships	Compliant
§2.1053; §80.211	Transmitter Unwanted Emissions(Radiated)	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310 N	186238	2025/04/29	2026/04/28
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2025/04/29	2026/04/28
Unknown	Cable	XH500C	J-10M-A	2025/04/29	2026/04/28
Agilent	Signal Generator	N5183A	MY50140588	2024/09/13	2025/09/12
COM-POWER	Dipole Antenna	3121C	9209-860	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2025/03/26	2026/03/25
A.H.System	Preamplifier	PAM-0118P	489	2024/11/15	2025/11/14
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
The Electro-Mechanics Co.	Horn Antenna	3115	9107-3694	2024/06/06	2027/06/05
Unknown	RF Cable	KMSE	735	2024/12/06	2025/12/05
Unknown	RF Cable	UFA147	219661	2024/12/06	2025/12/05
Unknown	RF Cable	XH750A-N	J-10M	2024/12/06	2025/12/05
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200982	2024/09/20	2025/09/19
BACL	Temperature & Humidity Chamber	BTH-150-40	30144	2024/12/06	2025/12/05
HP	RF Communication test set	8920B	US36141849	2024/12/04	2025/12/03
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR
Fluke	Digital Multimeter	287	19000011	2025/04/29	2026/04/28
JFW	30dB Attenuator	50FH-030-100 RF	F-03-EM032	2025/06/26	2026/06/25
Micro-Tronics	RF Cable	8082135	W1113	2025/06/26	2026/06/25

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §80.209 - TRANSMITTER FREQUENCY TOLERANCES

Applicable Standard

FCC §80.209

Frequency bands and categories of stations	Tolerances ¹
(5) Band 156-162 MHz:	
(i) Coast stations:	
For carriers licensed to operate with a carrier power:	
Below 3 watts	10.
3 to 100 watts	5. ⁷
(ii) Ship stations	10. ⁴
(iii) Survival craft stations operating on 121.500 MHz	50.
(iv) EPIRBs:	
Operating on 121.500 and 243.000 MHz	50.
Operating on 156.750 and 156.800 MHz. ⁶	10.

Test Procedure

According to ANSI C63.26-2015 Section 5.6:

Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage.

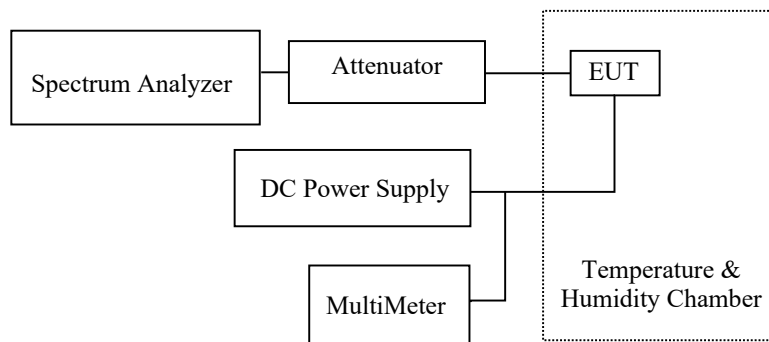
The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency determining circuit element shall be made subsequent to this initial set-up. Frequency stability is tested:

- At 10 °C intervals of temperatures between –30 °C and +50 °C at the manufacturer's rated supply voltage, and
- At +20 °C temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage then the –15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.

During the test all necessary settings, adjustments and control of the EUT have to be performed without disturbing the test environment, i.e., without opening the environmental chamber. The frequency stabilities can be maintained to a lesser temperature range provided that the transmitter is automatically inhibited from operating outside the lesser temperature range. For handheld equipment that is only capable of operating from internal batteries and the supply voltage cannot be varied, the frequency stability tests shall be performed at the nominal battery voltage and the battery end point voltage specified by the manufacturer. An external supply voltage can be used and set at the internal battery nominal voltage, and again at the battery operating end point voltage which shall be specified by the equipment manufacturer.

If an unmodulated carrier is not available, the mean frequency of a modulated carrier can be obtained by using a frequency counter with gating time set to an appropriately large multiple of bit periods (gating time depending on the required accuracy). Full details on the choice of values shall be included in the test report.

Block Diagram of Test Setup



Test Data

Environmental Conditions

Temperature:	25.7-26.3 °C
Relative Humidity:	51~55%
ATM Pressure:	100.3~100.7kPa

The testing was performed by Cheeb Huang from 2025-08-14 to 2025-08-16.

Test Mode: Transmitting

Test Result: Pass. Please refer to following table and plots.

Un-modulation, Test Frequency: 156.650MHz, Limit: ±10.0ppm			
Temperature (°C)	Voltage Supplied (V _{DC})	Measured Frequency (MHz)	Frequency Error (ppm)
-30	7.4	156.649978	-0.14
-20		156.650050	0.32
-10		156.649917	-0.53
0		156.649987	-0.08
10		156.650045	0.29
20		156.649934	-0.42
30		156.650080	0.51
40		156.650099	0.63
50		156.650034	0.22
20	6.3	156.649975	-0.16
20	8.9	156.649938	-0.4

Un-modulation, Test Frequency: 156.800MHz, Limit: ± 10.0 ppm			
Temperature (°C)	Voltage Supplied (V _{DC})	Measured Frequency (MHz)	Frequency Error (ppm)
-30	7.4	156.800167	1.07
-20		156.800141	0.90
-10		156.800413	2.63
0		156.799980	-0.13
10		156.800247	1.58
20		156.800025	0.16
30		156.800109	0.70
40		156.800223	1.42
50		156.800300	1.91
20	6.3	156.800245	1.56
20	8.9	156.800126	0.80

Note: the operation voltage range was declared by manufacturer[#].

FCC §80.213 - MODULATION REQUIREMENTS

Applicable Standard

FCC § 80.213:

(a) Transmitters must meet the following modulation requirements:

- (1) When double sideband emission is used the peak modulation must be maintained between 75
 - (2) When phase or frequency modulation is used in the 156-162 MHz band the peak modulation must be maintained between 75 and 100 percent. A frequency deviation of ± 5 kHz is defined as 100 percent peak modulation; and
 - (3) In single sideband operation the upper sideband must be transmitted. Single sideband transmitters must automatically limit the peak envelope power to their authorized operating power and meet the requirements in § 80.207(c).
- (b) Radiotelephone transmitters using A3E, F3E and G3E emission must have a modulation limiter to prevent any modulation over 100 percent. This requirement does not apply to survival craft transmitters, to transmitters that do not require a license or to transmitters whose output power does not exceed 3 watts.
- (c) Coast station transmitters operated in the 72.0-73.0 MHz and 75.4-76.0 MHz bands must be equipped with an audio low-pass filter. The filter must be installed between the modulation limiter and the modulated radio frequency stage. At frequencies between 3 kHz and 15 kHz it must have an attenuation greater than at 1 kHz by at least $40\log_{10}(f/3)$ dB where “f” is the frequency in kilohertz. At frequencies above 15 kHz the attenuation must be at least 28 dB greater than at 1 kHz.
- (d) Ship and coast station transmitters operating in the 156-162 MHz and 216-220 bands must be capable of proper operation with a frequency deviation that does not exceed ± 5 kHz when using any emission authorized by § 80.207.

Test Procedure

According to ANSI C63.26-2015 Section 5.3.2:

Modulation limiting test methodology

Modulation limiting is the ability of a transmitter circuit to limit the transmitter from producing deviations in excess of a rated system deviation.

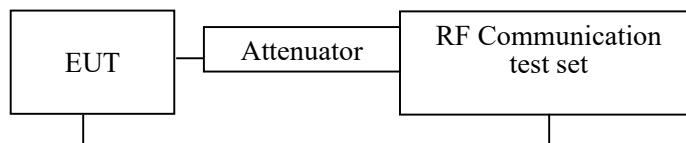
- a) Connect the equipment as illustrated in Figure.
- b) Adjust the transmitter per the manufacturer’s procedure for full rated system deviation.
- c) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤ 0.25 Hz to ≥ 15000 Hz. Turn the de-emphasis function off.
- d) Apply a 1000 Hz modulating signal to the transmitter from the audio frequency generator, and adjust the level to obtain 60% of full rated system deviation. This is the 0 dB reference level.
- e) Increase the level from the audio generator by 20 dB in 5 dB increments recording the deviation as measured from the test receiver in each step. Verify that the audio level used to make the OBW measurement is included in the sweep.
- f) Repeat for step e) at 300 Hz, 2500 Hz and 3000 Hz at a minimum using the 0 dB reference level obtained in step d).
- g) Set the test receiver to measure peak negative deviation and repeat step d) through step f).
- h) The values recorded in step f) and step g) are the modulation limiting.
- i) Plot the data set as a percentage of deviation relative to the 0 dB reference point versus input voltage.

According to ANSI C63.26-2015 Section 5.3.3:

Audio frequency response test methodology—Constant Input

- Connect the equipment as illustrated in Figure.
- Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤ 50 Hz to $\geq 15\,000$ Hz. Turn the de-emphasis function off.
- Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
- Apply a 1000 Hz tone and adjust the audio frequency generator to produce 20% of the rated system deviation.
- Set the test receiver to measure rms deviation and record the deviation reading as DEVREF.
- Set the audio frequency generator to the desired test frequency between 300 Hz and 3000 Hz.

Block Diagram of Test Setup



Test Data

Environmental Conditions

Temperature:	25.7-26.3 °C
Relative Humidity:	51~55%
ATM Pressure:	100.3~100.7kPa

The testing was performed by Cheeb Huang from 2025-08-14 to 2025-08-16.

Test Mode: Transmitting

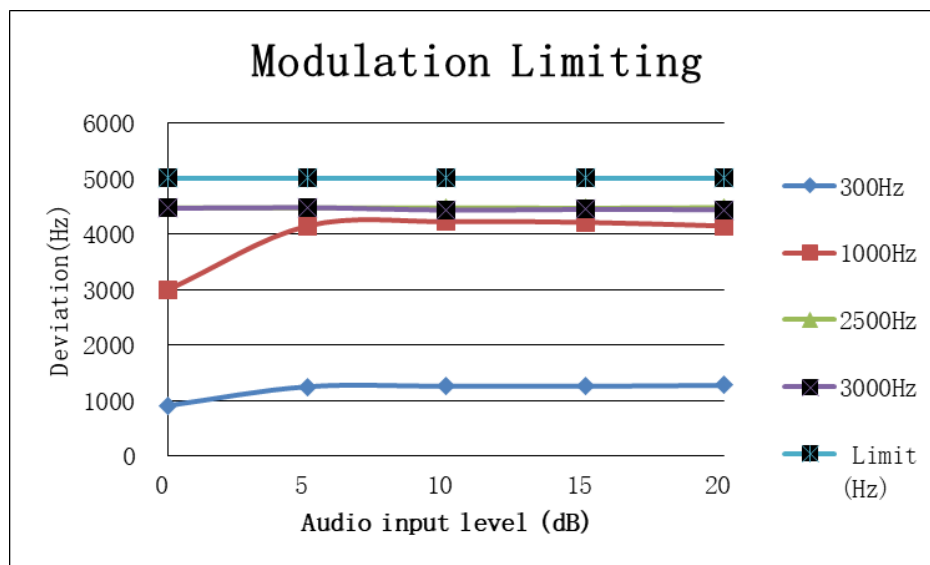
Test Result: Pass. Please refer to the following tables and plots.

MODULATION LIMITING

Carrier Frequency: 156.800MHz, Separation: 25 kHz

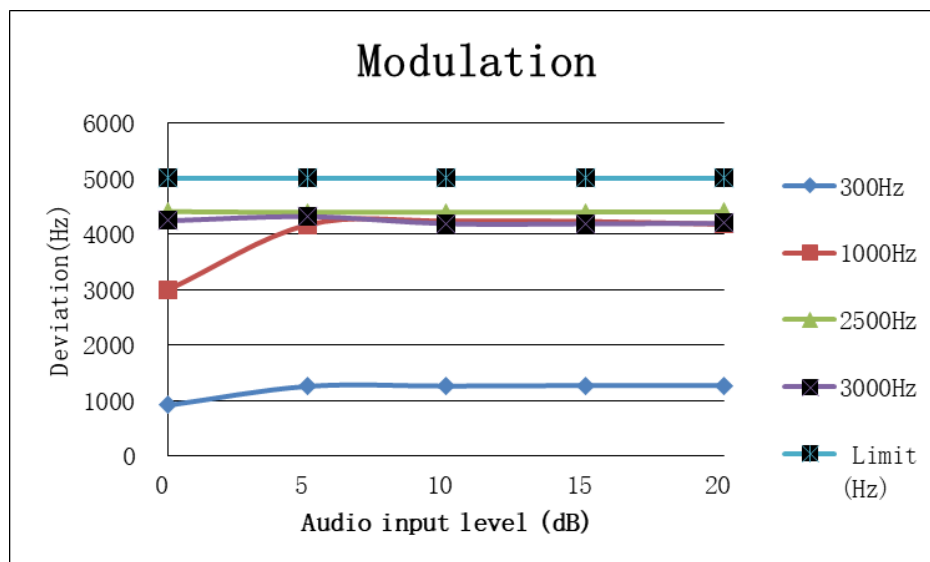
Peak+ deviation

Audio input level (dB)	Deviation (Hz)				FCC Limit [kHz]
	300Hz	1000Hz	2500Hz	3000Hz	
20	1276	4143	4476	4435	5000
15	1260	4210	4465	4443	5000
10	1259	4223	4473	4430	5000
5	1253	4145	4468	4474	5000
0	915	3000	4469	4463	5000



Peak- deviation

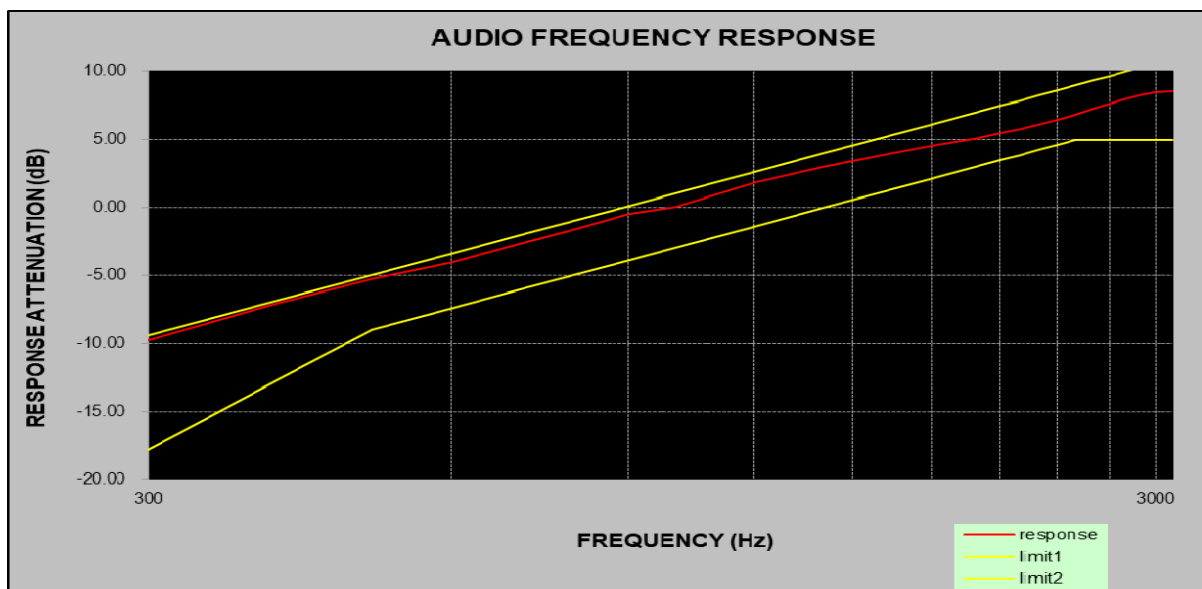
Audio input level (dB)	Deviation (Hz)				FCC Limit [kHz]
	300Hz	1000Hz	2500Hz	3000Hz	
20	1274	4175	4395	4193	5000
15	1273	4226	4394	4183	5000
10	1263	4235	4390	4185	5000
5	1258	4165	4389	4315	5000
0	919	3000	4403	4237	5000



Audio Frequency Response

Carrier Frequency: 156.800MHz, Separation: 25 kHz

Audio Frequency (Hz)	Response Attenuation (dB)
300	-9.74
400	-7.15
500	-5.27
600	-4.05
700	-2.73
800	-1.54
900	-0.51
1000	0.00
1200	1.82
1400	2.97
1600	3.82
1800	4.53
2000	5.12
2100	5.45
2200	5.73
2300	6.07
2400	6.45
2500	6.83
2600	7.24
2700	7.62
2800	7.98
2900	8.24
3000	8.43



FCC §80.215 - TRANSMITTER POWER

Applicable Standard

(a) Transmitter power shown on the radio station authorization is the maximum power the licensee is authorized to use. Power is expressed in the following terms:

- (1) For single sideband emission: Peak envelope power
- (2) For G3E emission: Carrier power;
- (3) For PON and F3N emission: Mean power;
- (4) For all emissions in the 1626.5-1646.5 MHz band: equivalent isotropic radiated power.
- (5) For all other emissions: the carrier power multiplied by 1.67.

(e) Ship stations frequencies above 27500 kHz. The maximum power must not exceed the values listed below.

- (1) Ship stations 156-162 MHz - 25W^[6]

^[6]Reducible to 1 watt or less, except for transmitters limited to public correspondence channels and used in an automated system.

(g) The carrier power of ship station radiotelephone transmitters, except portable transmitters, operating in the 156-162 MHz band must be at least 8 but not more than 25 watts. Transmitters that use 12 volt lead acid storage batteries as a primary power source must be measured with a primary voltage between 12.2 and 13.7 volts DC. Additionally, unless otherwise indicated, equipment in radiotelephone ship stations operating in the 156-162 MHz band must meet the following requirements:

- (1) All transmitters and remote control units must be capable of reducing the carrier power to one watt or less;
- (2) Except as indicated in (g)(4) of this section, all transmitters manufactured after January 21, 1987, or in use after January 21, 1997, must automatically reduce the carrier power to one watt or less when the transmitter is tuned to 156.375 MHz or 156.650 MHz, and must be provided with a manual override switch which when held by an operator will permit full carrier power operation on 156.375 MHz and 156.650 MHz;
- (3) [Reserved]
- (4) Hand-held portable transmitters are not required to comply with the automatic reduction of carrier power in (g)(2) of this section; and
- (5) Transmitters dedicated for use on public correspondence duplex channels as additional equipment to a VHF ship station in the Great Lakes which meet all pertinent rules in this part are not required to reduce their carrier power to one watt.

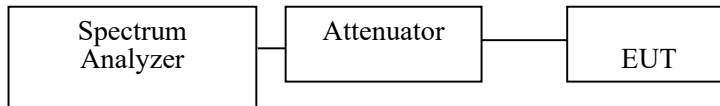
Test Procedure

C63.26-2015, Clause 5.2.3.3

This procedure can be used to measure the peak power in either a CW-like or noise-like narrowband RF signal. The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW $\geq 3 \times$ RBW.

- Set the RBW $\geq$ OBW.
- Set VBW $\geq 3 \times$ RBW.
- Set span $\geq 2 \times$ OBW.
- Sweep time $\geq 10 \times$ (number of points in sweep) $\times$ (transmission symbol period).
- Detector = peak.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the peak amplitude level

Block Diagram of Test Setup



Note: The Insertion loss of the RF cable, Attenuators was offset into the Spectrum Analyzer.

Test Data

Environmental Conditions

Temperature:	25.7-26.3 °C
Relative Humidity:	51~55%
ATM Pressure:	100.3~100.7kPa

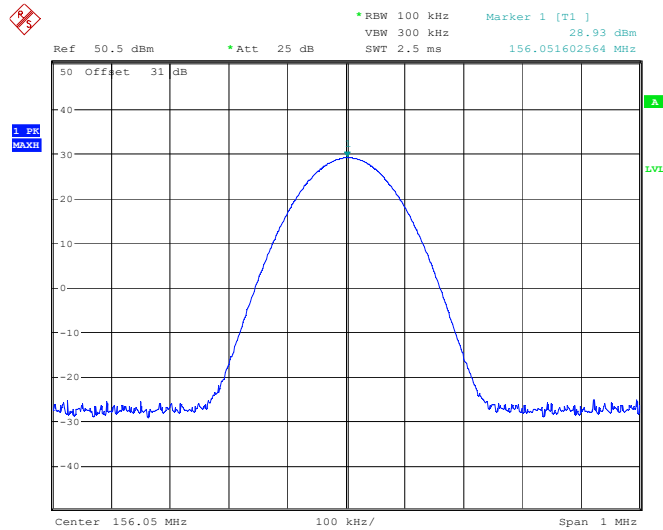
The testing was performed by Cheeb Huang from 2025-08-14 to 2025-09-06.

Test Mode: Transmitting

Test Result: Pass. Please refer to the following tables and plots.

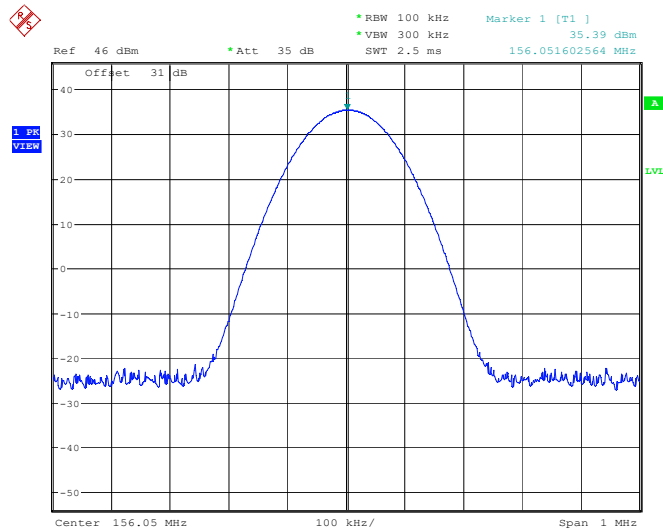
Test Frequency (MHz)	High Power Level		Middle Power Level		Low Power Level	
	Reading(dBm)	Limit(dBm)	Reading(dBm)	Limit(dBm)	Reading(dBm)	Limit(dBm)
156.050	37.85	43.98	35.39	43.98	28.93	30.00
156.800	38.01	43.98	35.33	43.98	29.28	30.00
157.425	38.02	43.98	35.48	43.98	29.86	30.00
156.375	/	/	/	/	29.91	30.00
156.650	/	/	/	/	29.94	30.00
156.875	/	/	/	/	29.86	30.00

Frequency 156.050MHz, Low Power



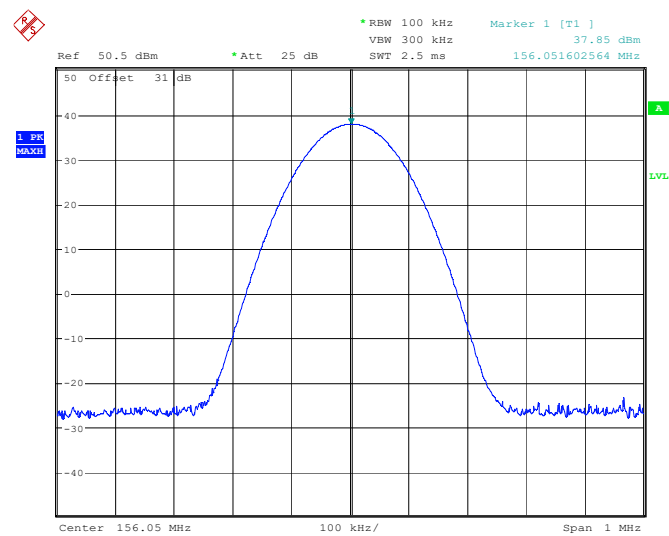
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 14.AUG.2025 16:57:08

Frequency 156.050 MHz, Middle Power



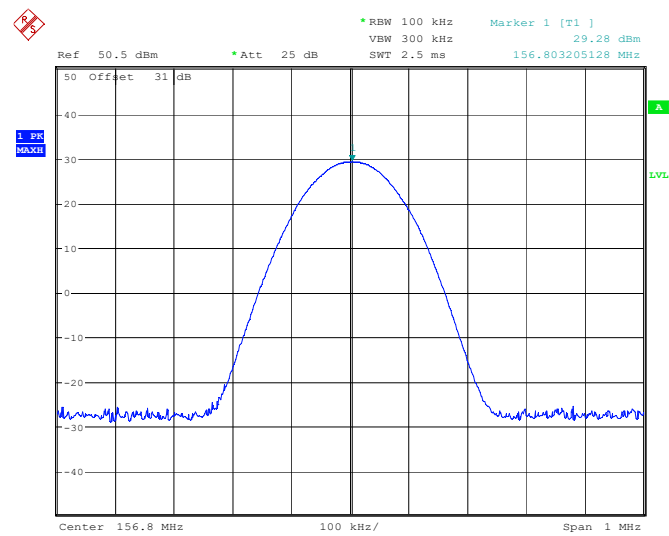
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 20:50:18

Frequency 156.050 MHz, High Power



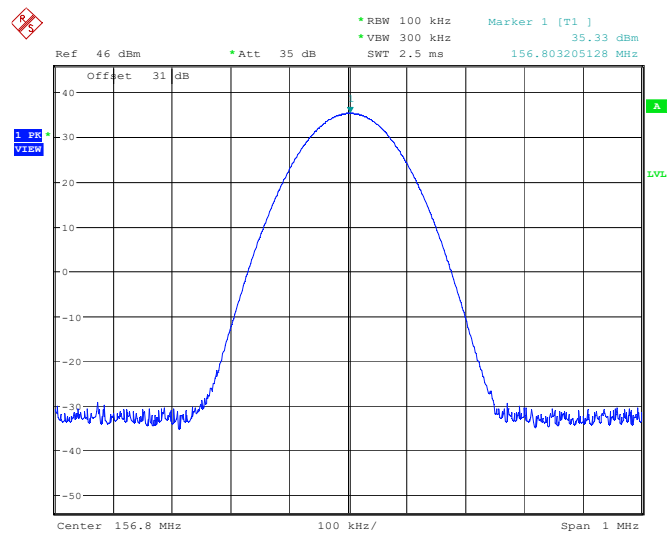
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 14.AUG.2025 16:58:40

Frequency 156.800 MHz, Low Power



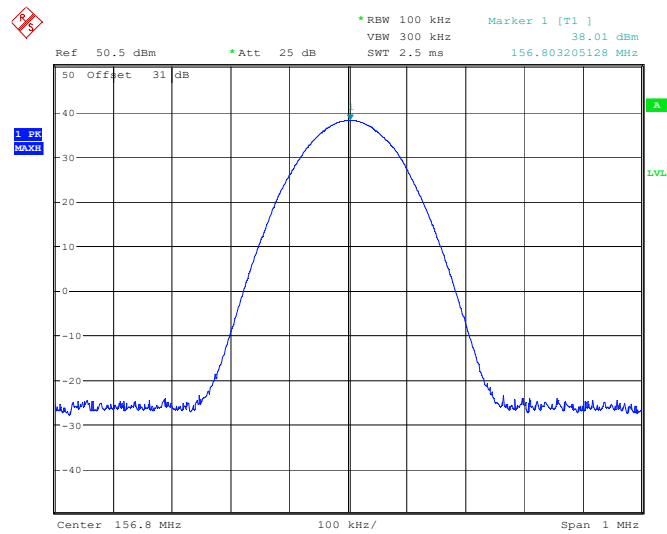
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 14.AUG.2025 17:00:43

Frequency 156.800 MHz, Middle Power



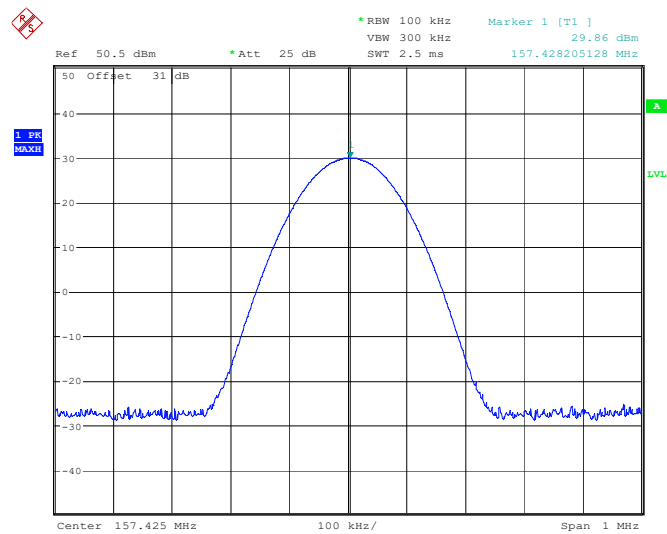
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 20:53:49

Frequency 156.800 MHz, High Power



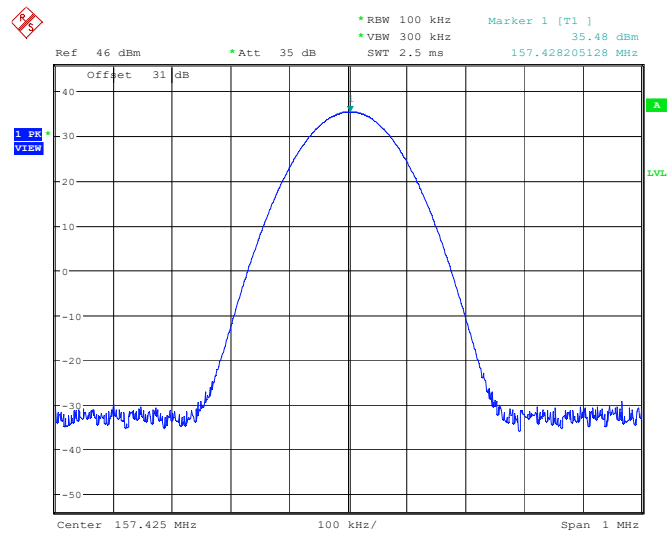
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 14.AUG.2025 17:00:14

Frequency 157.425MHz, Low Power



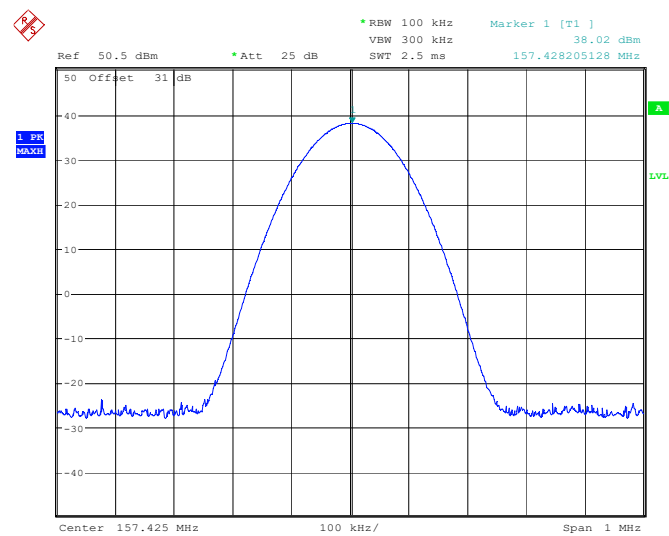
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 14.AUG.2025 17:03:08

Frequency 157.425MHz, Middle Power



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:07:16

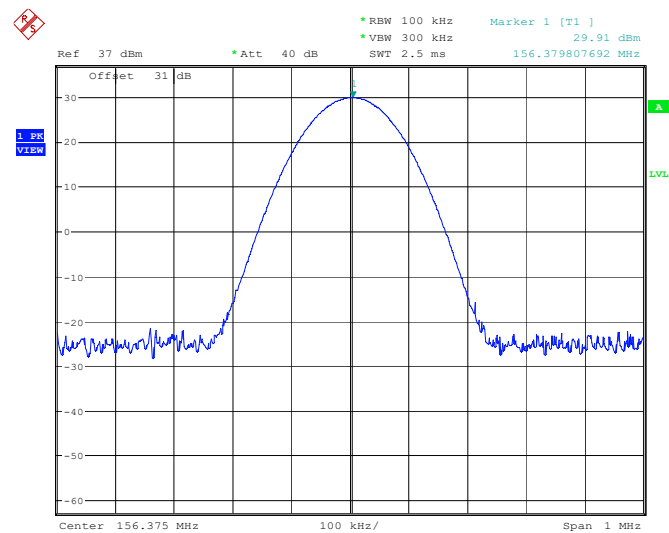
Frequency 157.425MHz, High Power



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 14.AUG.2025 17:03:24

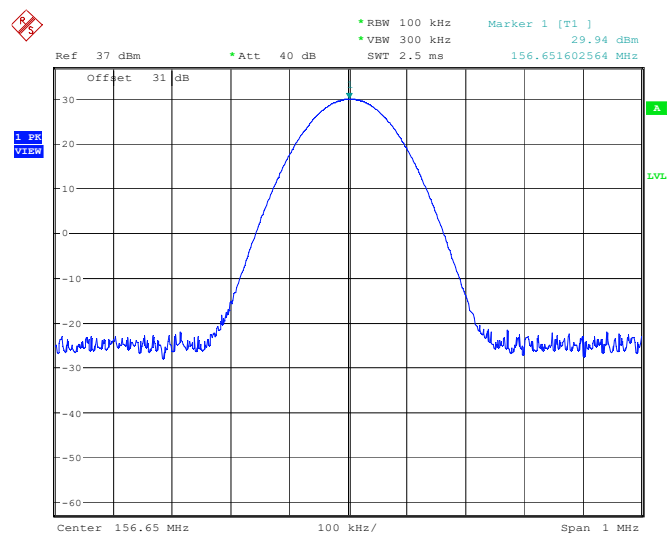
Low power only channel

Frequency 156.375MHz, Low Power



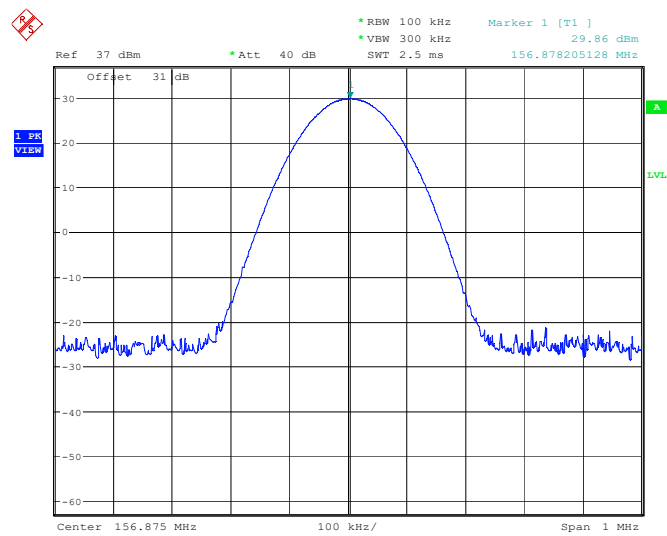
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:45:29

Frequency 156.65 MHz, Low Power



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:46:01

Frequency 156.875MHz, Low Power



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:44:54

FCC §80.205 & §80.211 - OCCUPIED BANDWIDTH & EMISSION MASK

Applicable Standard

FCC §80.205 Bandwidths:

(a) An emission designator shows the necessary bandwidth for each class of emission of a station except that in ship earth stations it shows the occupied or necessary bandwidth, whichever is greater. The following table gives the class of emission and corresponding emission designator and authorized bandwidth:

Class of emission	Emission designator	Authorized bandwidth (kHz)
G3E ⁸	16K0G3E	20.0

⁸ Applicable only when maximum frequency deviation is 5 kHz. See also paragraph (b) of this section.

(b) For land stations the maximum authorized frequency deviation for F3E or G3E emission is as follows:

- (1) 5 kHz in the 72.0-73.0 MHz, 75.4-76.0 MHz and 156-162 MHz bands;
- (2) 15 kHz for stations which were authorized for operation before December 1, 1961, in the 73.0-74.6 MHz band.

FCC §80.211 Emission limitations:

(f) The mean power when using emissions other than those in paragraphs (a), (b), (c) and (d) of this section:

- (1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;
- (2) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and
- (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus $10\log_{10}$ (mean power in watts) dB.

Test Procedure

According to ANSI C63.26-2015 Section 5.4.4:

The OBW is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The following procedure shall be used for measuring (99%) power bandwidth:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of $1.5 \times \text{OBW}$ is sufficient).
- b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3. NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.
- d) Set the detection mode to peak, and the trace mode to max-hold.

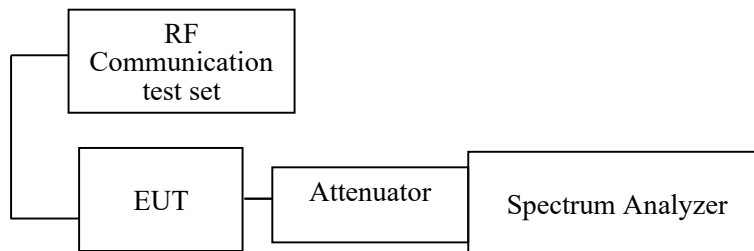
e) If the instrument does not have a 99% OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5% of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5% of the total is reached and record that frequency as the upper OBW frequency. The 99% power OBW can be determined by computing the difference these two frequencies.

f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

According to ANSI C63.26-2015 Section 5.7.3:

f) See Annex I for example emission mask plots.

Block Diagram of Test Setup



Note: The Insertion loss of the RF cable, Attenuators was offset into the Spectrum Analyzer.

Test Data

Environmental Conditions

Temperature:	25.7-26.3 °C
Relative Humidity:	51~55%
ATM Pressure:	100.3~100.7kPa

The testing was performed by Cheeb Huang from 2025-08-16 to 2025-09-06.

Test mode: Transmitting

Test Result: Pass. Please refer to the following tables and plots.

Test Frequency (MHz)	99% Occupied Bandwidth (kHz)			
	High Power Level	Middle Power Level	Low Power Level	Limit
156.050	15.000	15.000	15.096	20
156.800	15.096	15.096	15.096	20
157.425	15.096	15.096	15.096	20
156.375	/	/	15.096	20
156.650	/	/	15.000	20
156.875	/	/	15.096	20

Note:

Emission bandwidth was based on calculation method instead of measurement.

Emission Designator: Per CFR 47 §2.201& §2.202, BW = 2M + 2D

For FM Mode (Channel Spacing: 25 kHz)

Emission Designator: 16K0G3E

In this case, the maximum modulating frequency is 3.0 kHz with a 5.0 kHz deviation.

$BW = 2(M+D) = 2*(3.0 \text{ kHz} + 5.0 \text{ kHz}) = 16 \text{ kHz} = 16K0$

G3E portion of the designator represents a FM voice transmission

Therefore, the entire designator for 25 kHz channel spacing FM mode is 16K0G3E.

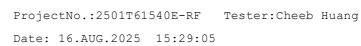
Delta 1 [T1] -2.74 dB
 *RBW 300 Hz
 *VBW 3 kHz
 Ref 50 dBm
 *Att 45 dB
 SWT 680 ms
 15.769230769 kHz

Offset 31 dB
 BW 15.096153846 kHz
 Marker 1 [T1] -1.36 dBm
 156.04286385 MHz
 Temp 1 [T1 BW] -1.16 dBm
 156.043173077 MHz
 Temp 2 [T1 BW] -1.27 dBm
 156.058263231 MHz

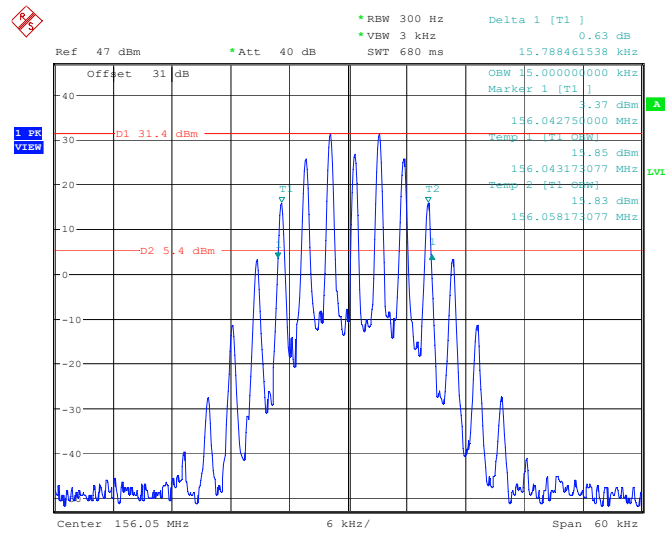
D1 24.9 dBm
 D2 -1.1 dBm

Center 156.05 MHz
 6 kHz/
 Span 60 kHz

Frequency 156.050 MHz: Emission Mask, Low Power

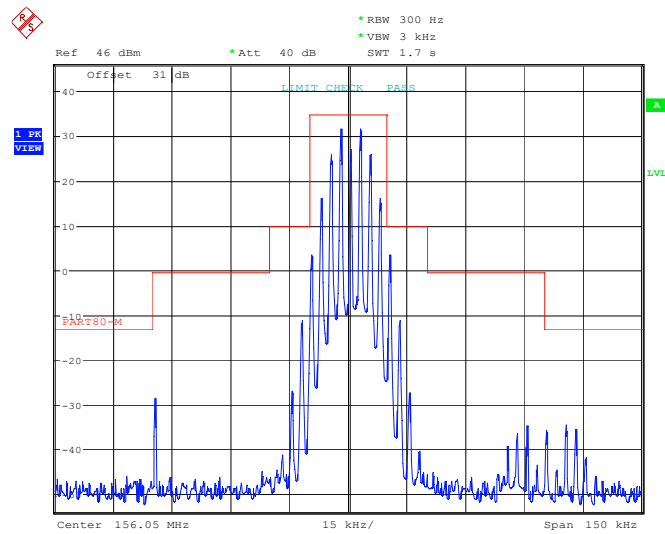


Frequency 156.050 MHz: 99% Occupied & 26 dB Bandwidth, Middle Power



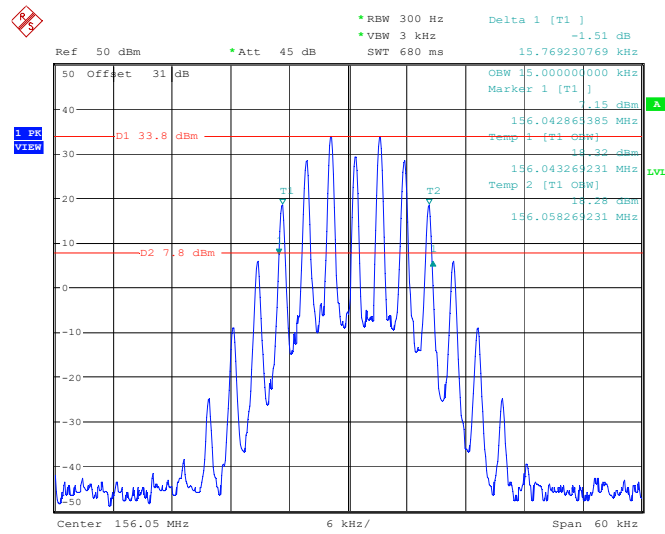
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
 Date: 6.SEP.2025 21:24:39

Frequency 156.050 MHz: Emission Mask, Middle Power



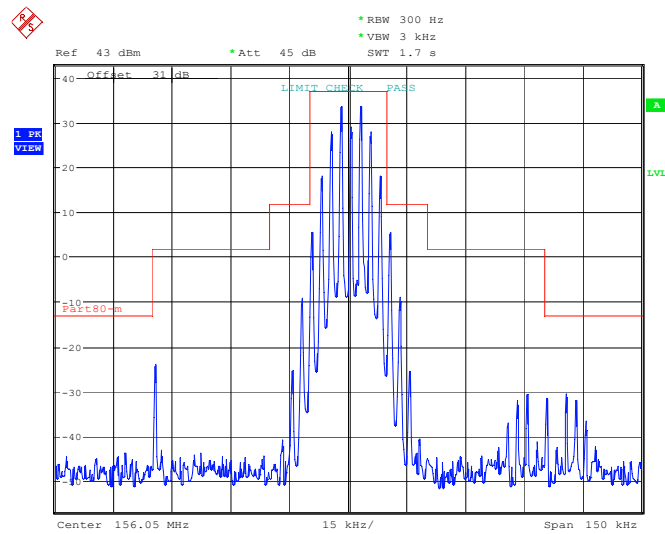
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
 Date: 6.SEP.2025 21:22:03

Frequency 156.050 MHz: 99% Occupied & 26 dB Bandwidth, High Power



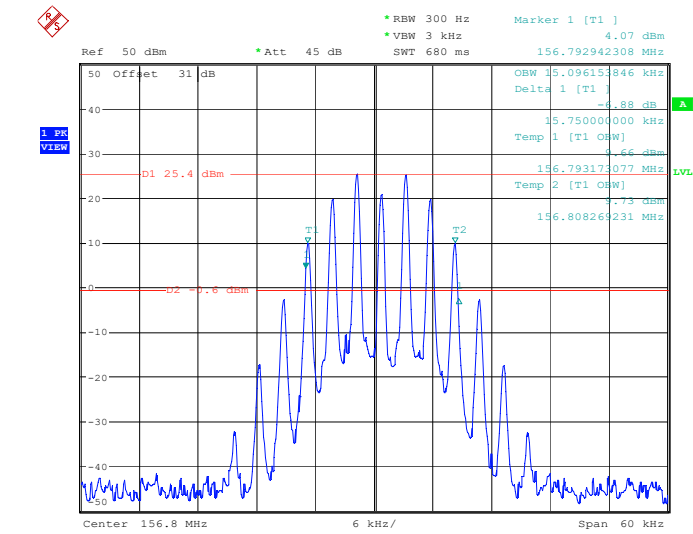
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 14:53:49

Frequency 156.050 MHz: Emission Mask, High Power



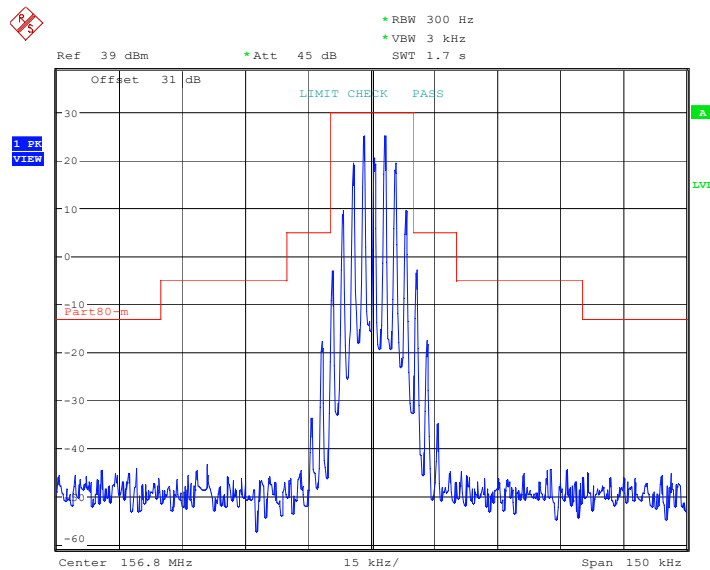
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:26:43

Frequency 156.800 MHz: 99% Occupied & 26 dB Bandwidth, Low Power



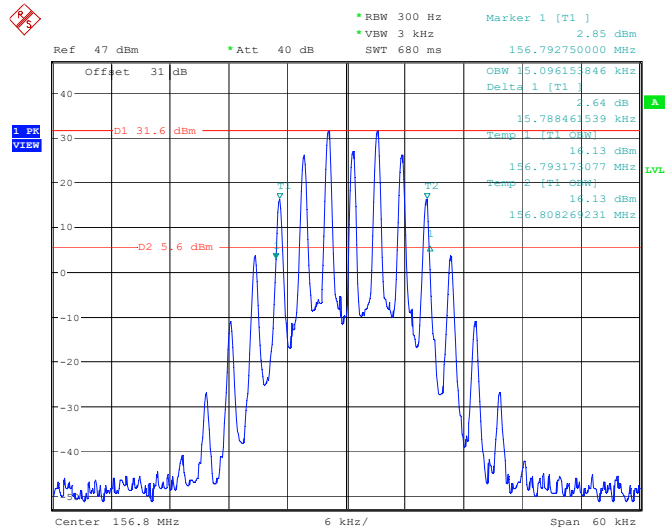
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 14:57:46

Frequency 156.800 MHz: Emission Mask, Low Power



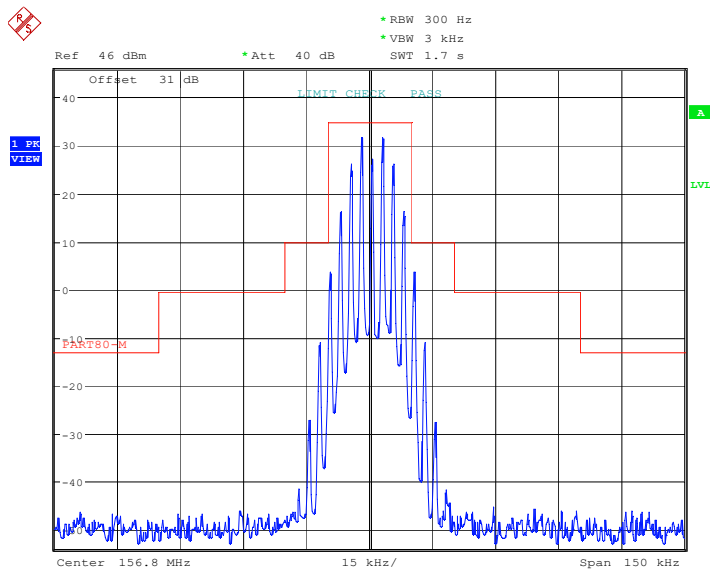
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:29:56

Frequency 156.800 MHz: 99% Occupied & 26 dB Bandwidth, Middle Power



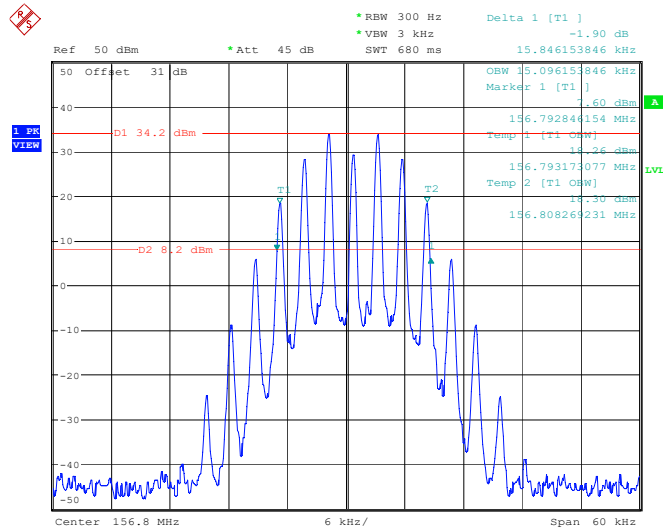
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:25:45

Frequency 156.800 MHz: Emission Mask, Middle Power



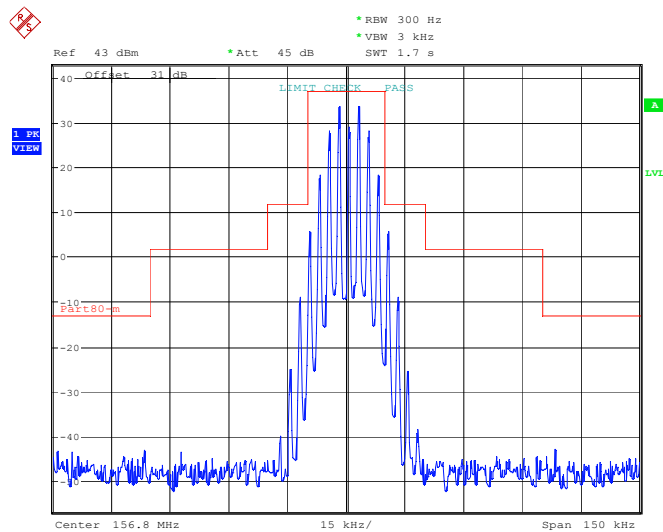
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:20:55

Frequency 156.800 MHz: 99% Occupied & 26 dB Bandwidth, High Power



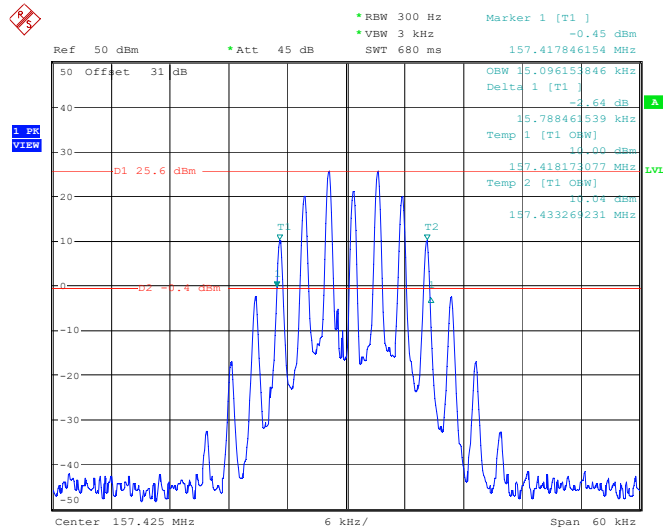
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 14:59:37

Frequency 156.800 MHz: Emission Mask, High Power



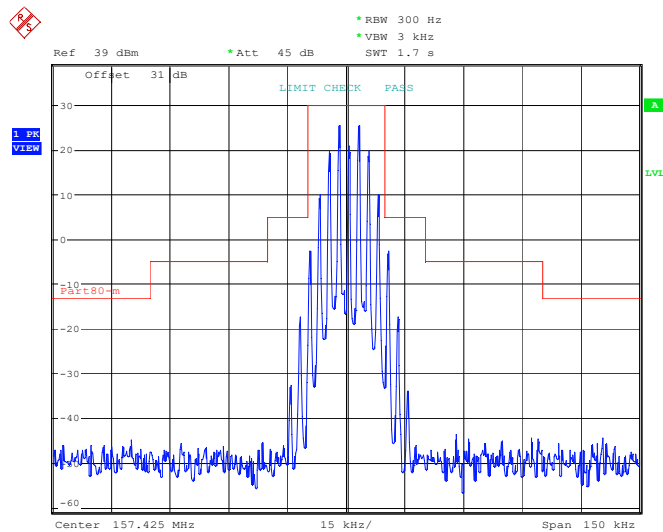
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:25:09

Frequency 157.425 MHz: 99% Occupied & 26 dB Bandwidth, Low Power



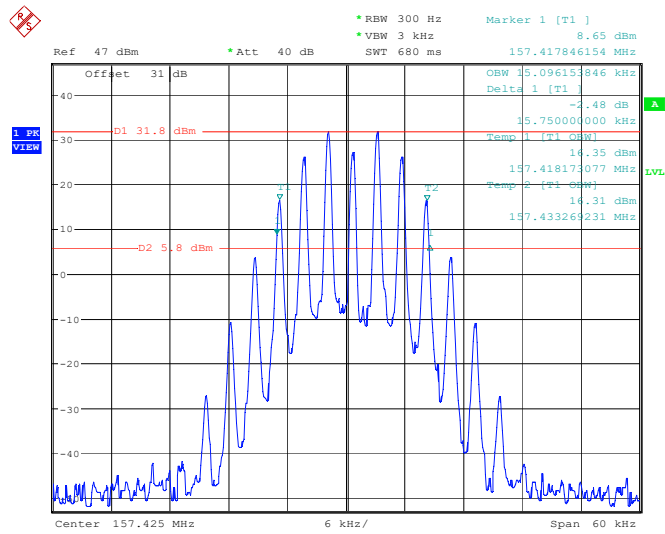
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:04:24

Frequency 157.425 MHz: Emission Mask, Low Power



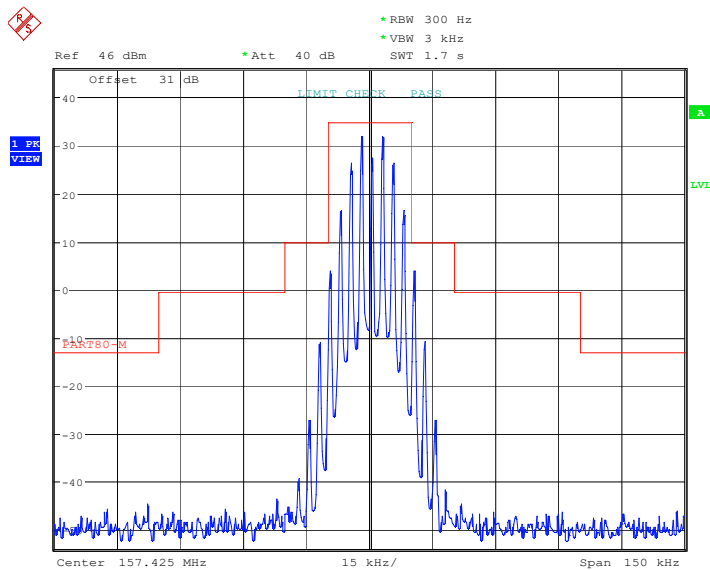
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:32:02

Frequency 157.425 MHz: 99% Occupied & 26 dB Bandwidth, Middle Power

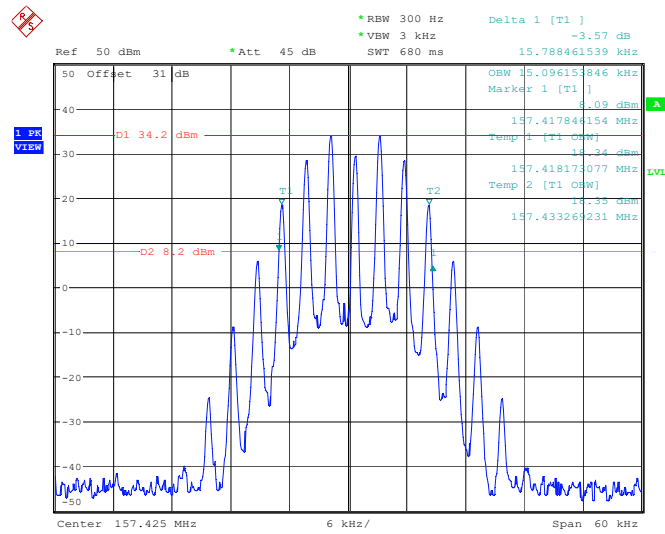


ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:28:04

Frequency 157.425 MHz: Emission Mask, Middle Power

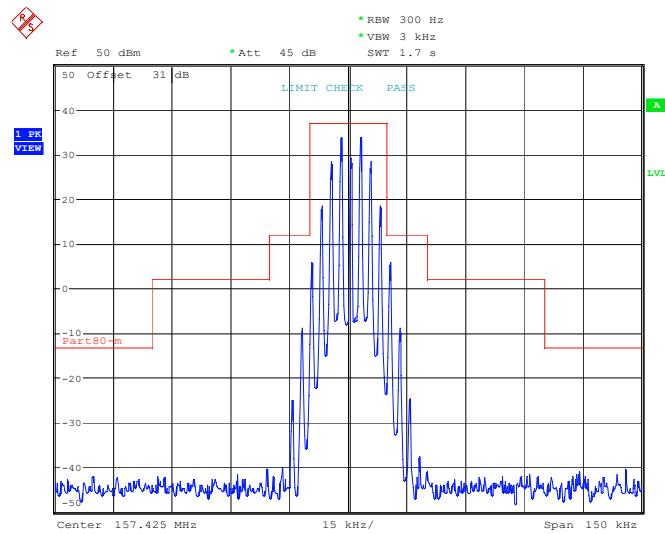


Frequency 157.425 MHz: 99% Occupied & 26 dB Bandwidth, High Power



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:05:27

Frequency 157.425 MHz: Emission Mask, High Power



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:22:04

RBW 300 Hz
 VBW 3 kHz
 SWT 680 ms
 Delta 1 [T1]
 ~-4.30 dB
 15.692307693 kHz

Offset 31 dB
 Att 40 dB
 Ref 37 dBm

Offset 31 dB
 d1 25.7 dBm
 T1
 T2
 d2 -1.3 dBm

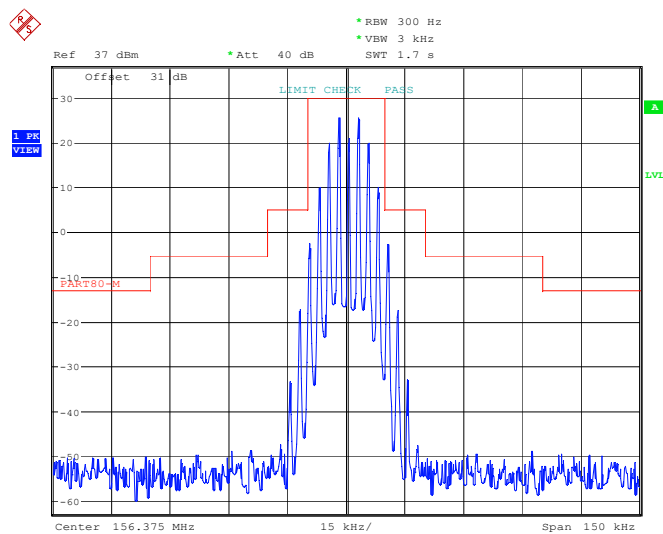
1 PR
 VIEW

OBSW 15.096153846 kHz
 Marker 1 [T1]
 2.67 dBm
 Temp 1 [T1] ONW
 156.367846154 MHz
 10.00 dBm
 156.368173077 MHz
 Temp 2 [T1] ONW
 9.92 dBm
 156.383269231 MHz

1 PR
 VIEW

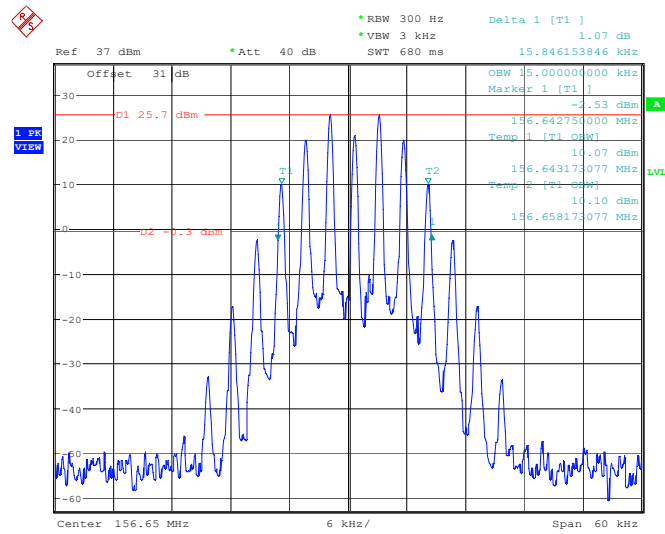
Center 156.375 MHz
 6 kHz/
 Span 60 kHz

Frequency 156.375 MHz: Emission Mask, Low Power



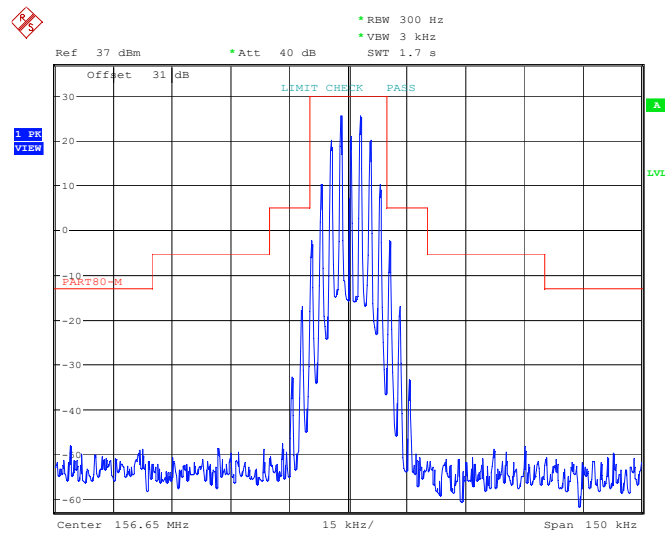
Version 3.0

Frequency 156.65 MHz: 99% Occupied & 26 dB Bandwidth, Low Power



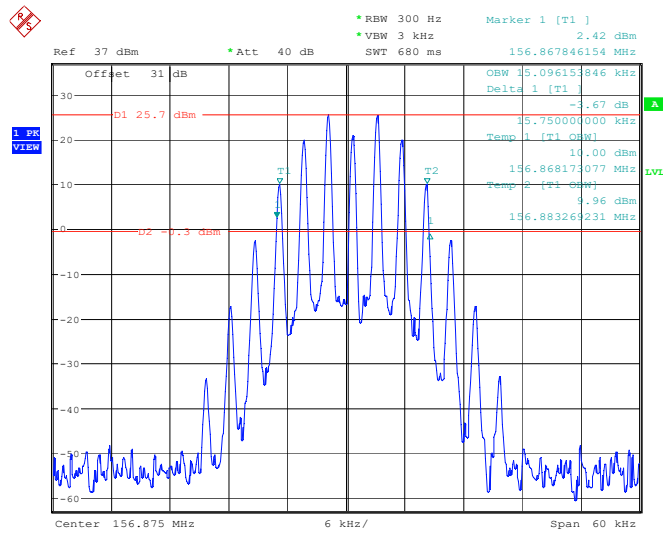
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:34:39

Frequency 156.65 MHz: Emission Mask, Low Power



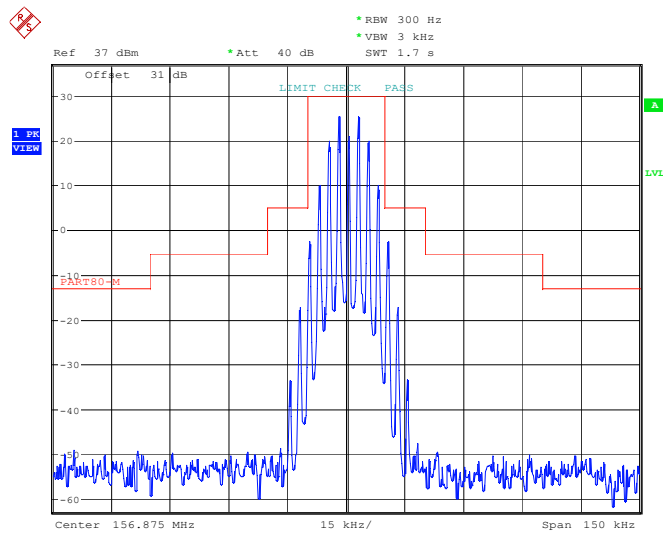
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:37:31

Frequency 156.875 MHz: 99% Occupied & 26 dB Bandwidth, Low Power



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:32:57

Frequency 156.875 MHz: Emission Mask, Low Power



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 6.SEP.2025 21:38:36

FCC §80.211 - Transmitter Unwanted Emissions(Conducted)

Applicable Standard

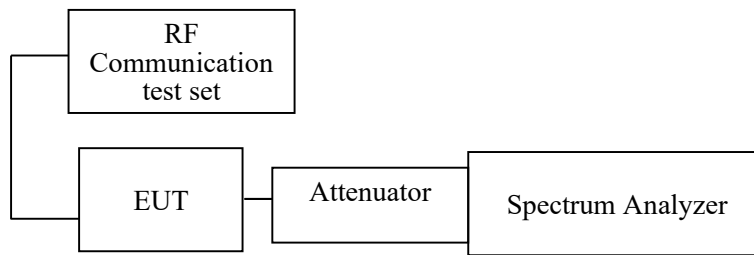
FCC §80.211 Emission limitations:

- (f) The mean power when using emissions other than those in paragraphs (a), (b), (c) and (d) of this section:
- (1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;
 - (2) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and
 - (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus $10\log_{10}$ (mean power in watts) dB.

Test Procedure

According to ANSI C63.26-2015 Section 5.7.4:

- a) Set the spectrum analyzer start frequency to the lowest frequency generated by the EUT, without going below 9 kHz, and the stop frequency to the lower frequency covered by the measurements previously performed in 5.7.3. As an alternative, the stop frequency can be set to the value specified in 5.1.1, depending on the EUT operating range, if the resulting plot can clearly demonstrate compliance for all frequencies not addressed by the out-of-band emissions measurements performed as per 5.7.3.
- b) When using an average power (rms) detector, ensure that the number of points in the sweep $\geq 2 \times (\text{span} / \text{RBW})$. This may require that the measurement range defined by the start and stop frequencies be subdivided, depending on the spectrum analyzer capabilities. This requirement does not apply to peak-detected power measurements. When average power is specified by the applicable regulation, a peak-detector can be utilized for preliminary measurements to accommodate wider frequency spans. Any emissions found in the preliminary measurement to exceed the applicable limit(s) shall be further examined using a power averaging (rms) detector with the minimum number of measurement points as defined above.
- c) The sweep time should be set to auto-couple for performing peak-detector measurements. For measurements that use a power averaging (rms) detector, the sweep time shall be set as described for out-of-band emissions measurements in item d) of 5.7.3.
- d) Identify and measure the highest spurious emission levels in each frequency range. It is not necessary to re-measure the out-of-band emissions as a part of this test. Record the frequencies and amplitudes corresponding to the measured emissions and capture the data plots.
- e) Repeat step b) through step d) for the upper spurious emission frequency range if not already captured by a wide span measurement performed as per the alternative provided in step a). The upper frequency for this measurement is defined in 5.1.1 as a function of the EUT operating range.
- f) Compare the results with the corresponding limit in the applicable regulation.
- g) The test report shall include the data plots of the measuring instrument display and the measured data.

Block Diagram of Test Setup

Note: The Insertion loss of the RF cable, Attenuators was offset into the Spectrum Analyzer.

Test Data**Environmental Conditions**

Temperature:	26.3 °C
Relative Humidity:	55%
ATM Pressure:	100.3kPa

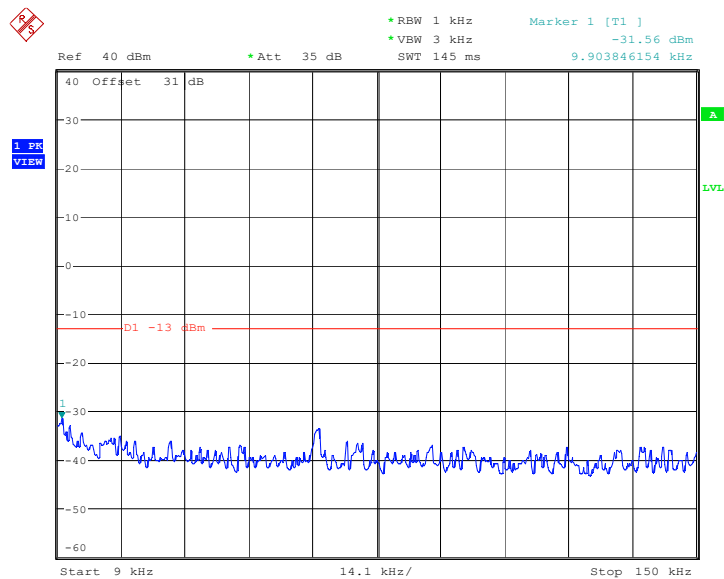
The testing was performed by Cheeb Huang on 2025-08-16.

Test Mode: Transmitting, worst case for high power level.

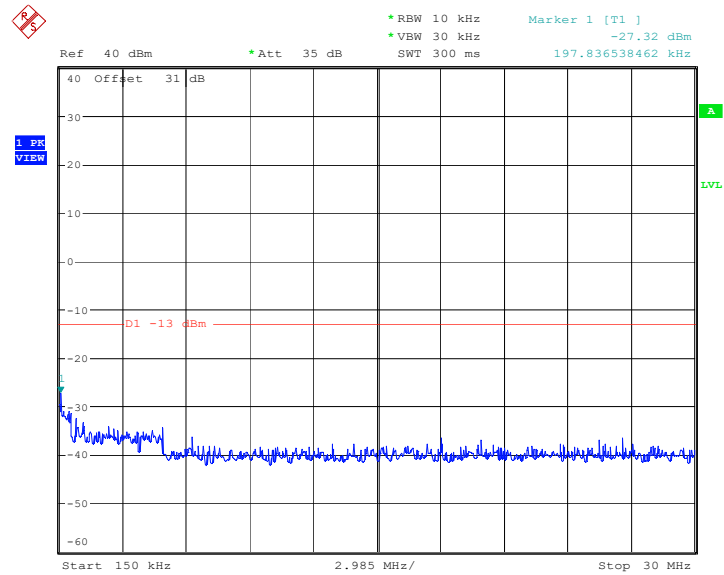
Test Result: Pass. Please refer to the following plots.

Note: Only the high power level channel was tested.

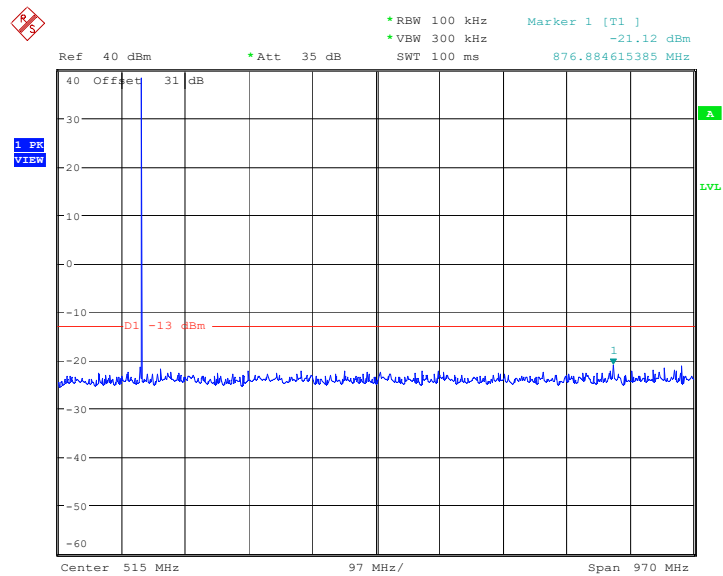
156.050MHz



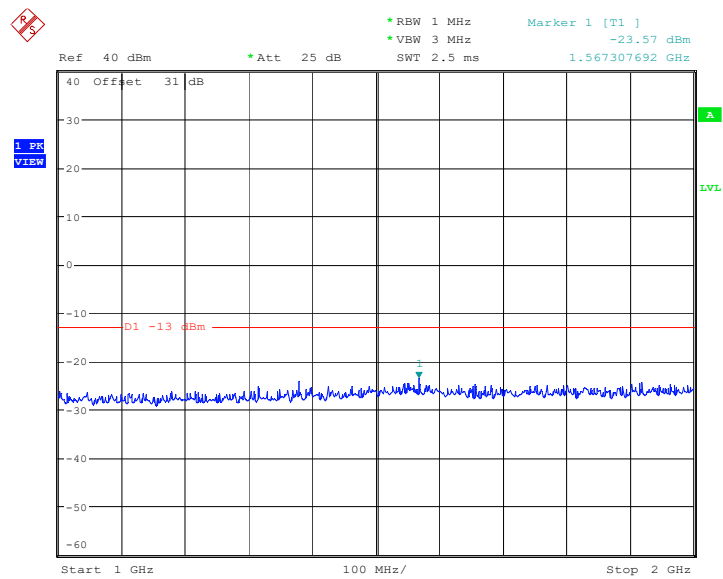
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:59:16



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 16:00:01

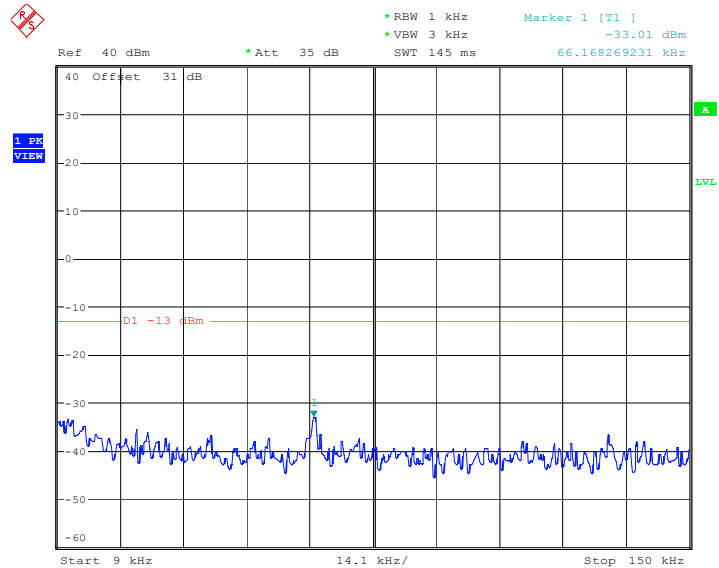


ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 16:02:06

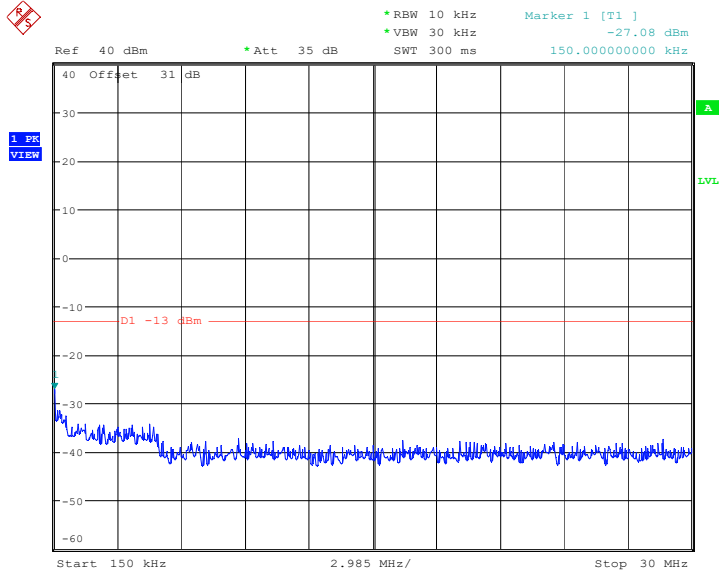


ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 16:06:37

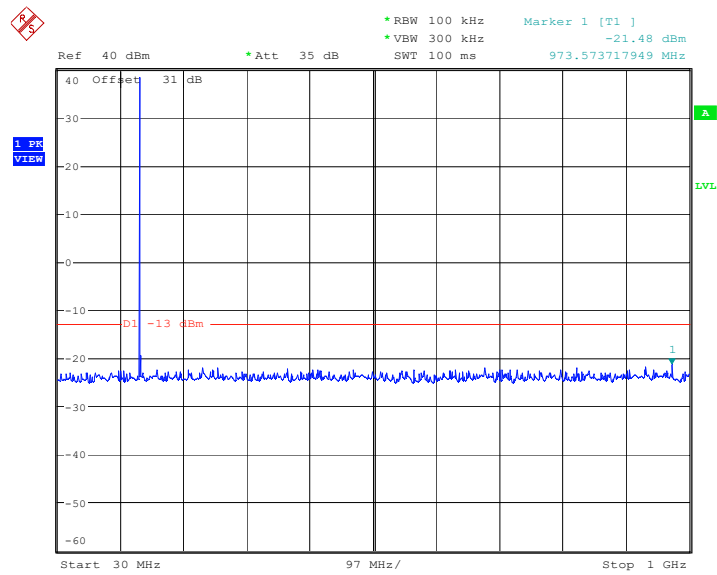
156.800MHz



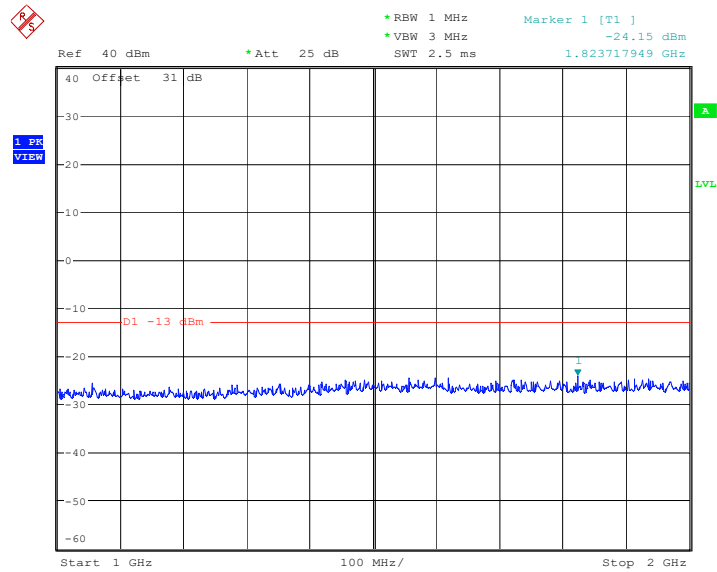
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:58:46



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 16:00:41

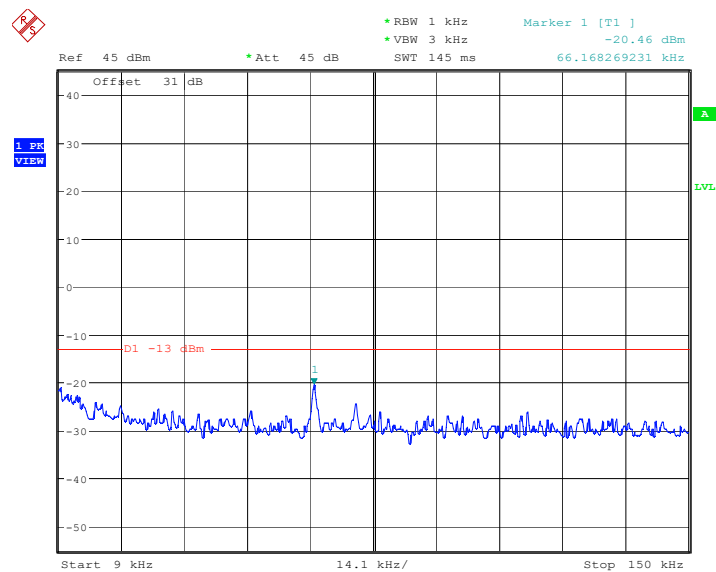


ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 16:02:37

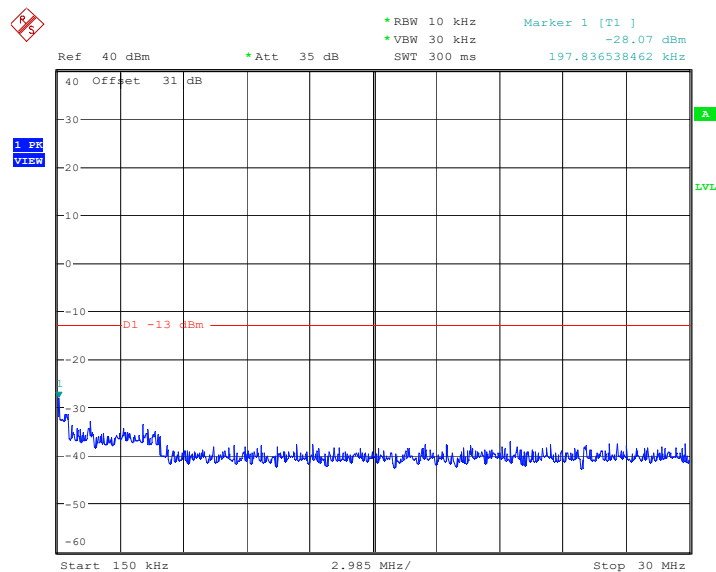


ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 16:03:25

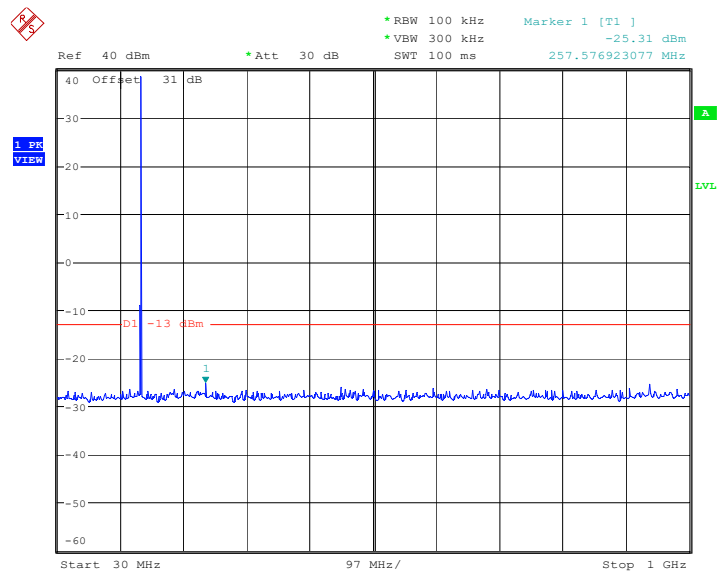
157.425MHz



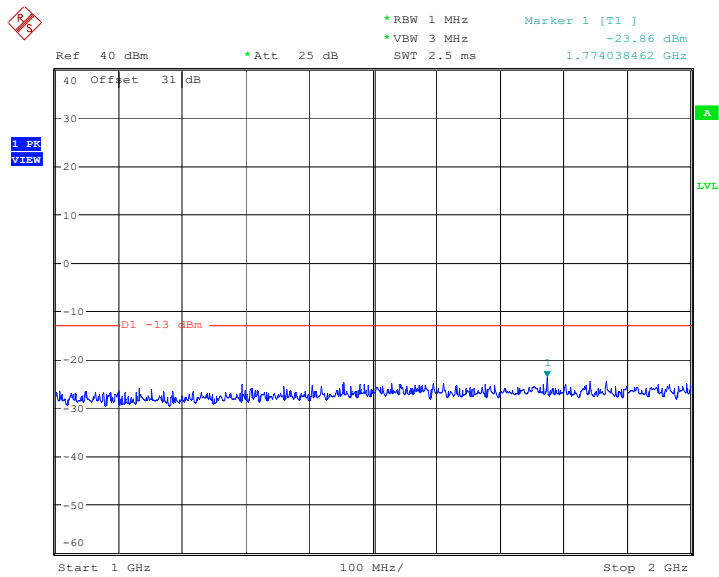
ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 16.AUG.2025 15:47:27



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Date: 16.AUG.2025 15:57:11



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Date: 16.AUG.2025 15:52:43

FCC §80.211 - RADIATED SPURIOUS EMISSIONS

Applicable Standard

FCC §80.211 Emission limitations:

- f) The mean power when using emissions other than those in paragraphs (a), (b), (c) and (d) of this section:
- (1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;
 - (2) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and
 - (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus $10\log_{10}$ (mean power in watts) dB.

Test setup:

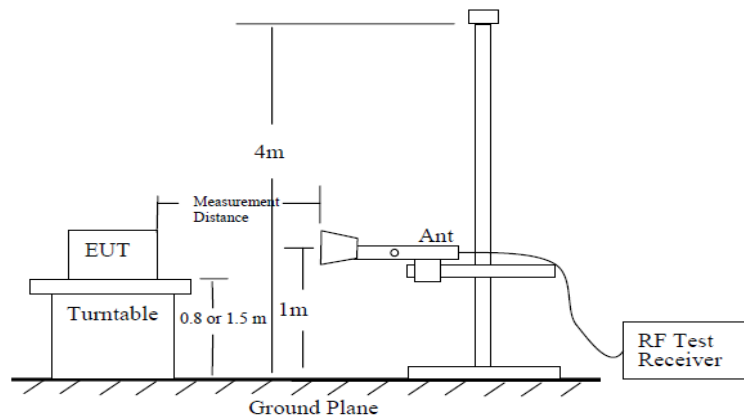


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

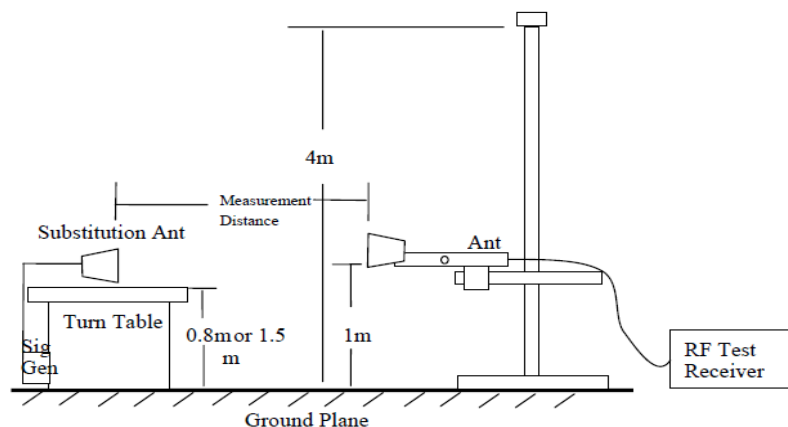


Figure 7—Substitution method set-up for radiated emission

Test Procedure:

According to ANSI C63.26-2015 Section 5.5.3:

- a) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.
- b) Each emission under consideration shall be evaluated:
 - 1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
 - 2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
 - 3) Return the turntable to the azimuth where the highest emission amplitude level was observed.
 - 4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
 - 5) Record the measured emission amplitude level and frequency using the appropriate RBW.
- c) Repeat step b) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
- d) Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.
- e) Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.
- f) Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.
- g) For each emission that was detected and measured in the initial test [i.e., in step b) and step c)]:
 - 1) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
 - 2) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step b) and step c).
 - 3) Record the output power level of the signal generator when equivalence is achieved in step 2).
- h) Repeat step e) through step g) with the measurement antenna oriented in the opposite polarization.
- i) Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:
$$P_e = P_s(\text{dBm}) - \text{cable loss (dB)} + \text{antenna gain (dBd)}$$
where
$$P_e = \text{equivalent emission power in dBm}$$
$$P_s = \text{source (signal generator) power in dBm}$$
NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.
- j) Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from: $\text{gain (dBd)} = \text{gain (dBi)} - 2.15 \text{ dB}$. If necessary, the antenna gain can be calculated from calibrated antenna factor information
- k) Provide the complete measurement results as a part of the test report.

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	47 %
ATM Pressure:	101.4 kPa

The testing was performed by Alex Yan on 2025-08-27 for below 1GHz and Wing K Ji on 2025-08-27 for above 1GHz.

Test Mode: Transmitting, only the high power level channel was tested.

Note: Scan with X-axis, Y-axis, Z-axis, the worst case Y-axis was recorded

Test Result: Pass. Please refer to the following tables.

Frequency (MHz)	Receiver Reading (dBm)	Polar (H/V)	Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi/dBd)			
156.050MHz								
312.10	57.67	H	-50.3	0.94	0.0	-51.24	-13	38.24
312.10	56.95	V	-48.3	0.94	0.0	-49.24	-13	36.24
468.15	57.13	H	-48.5	1.05	0.0	-49.55	-13	36.55
468.15	53.58	V	-47.4	1.05	0.0	-48.45	-13	35.45
624.20	50.33	H	-49.6	1.12	0.0	-50.72	-13	37.72
624.20	49.29	V	-48.6	1.12	0.0	-49.72	-13	36.72
780.25	59.27	H	-37.9	1.30	0.0	-39.20	-13	26.20
780.25	55.80	V	-42.2	1.30	0.0	-43.50	-13	30.50
936.30	67.07	H	-29.4	1.36	0.0	-30.76	-13	17.76
936.30	67.58	V	-26.5	1.36	0.0	-27.86	-13	14.86
1092.35	56.57	H	-57.5	1.10	6.10	-52.50	-13	39.50
1092.35	55.64	V	-59.7	1.10	6.10	-54.70	-13	41.70
1248.40	60.14	H	-54.1	1.10	6.70	-48.50	-13	35.50
1248.40	63.44	V	-51.5	1.10	6.70	-45.90	-13	32.90
1404.45	64.47	H	-49.8	0.90	7.80	-42.90	-13	29.90
1404.45	66.33	V	-48.7	0.90	7.80	-41.80	-13	28.80
1560.50	60.24	H	-54.1	1.50	8.60	-47.00	-13	34.00
1560.50	62.78	V	-52.1	1.50	8.60	-45.00	-13	32.00
1716.55	64.47	H	-49.7	1.50	8.80	-42.40	-13	29.40
1716.55	61.58	V	-53.2	1.50	8.80	-45.90	-13	32.90

Frequency (MHz)	Receiver Reading (dBm)	Polar (H/V)	Substituted			Absolute Level (dBm)	Limit (dBm)	Margi n (dB)
			Substituted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi/dBd)			
156.800MHz								
313.60	58.25	H	-49.8	0.94	0.0	-50.74	-13	37.74
313.60	56.51	V	-48.7	0.94	0.0	-49.64	-13	36.64
470.40	56.65	H	-49.0	1.05	0.0	-50.05	-13	37.05
470.40	53.90	V	-47.1	1.05	0.0	-48.15	-13	35.15
627.20	50.04	H	-49.8	1.12	0.0	-50.92	-13	37.92
627.20	50.09	V	-47.8	1.12	0.0	-48.92	-13	35.92
784.00	59.57	H	-37.6	1.30	0.0	-38.90	-13	25.90
784.00	56.80	V	-41.2	1.30	0.0	-42.50	-13	29.50
940.80	66.46	H	-30.0	1.36	0.0	-31.36	-13	18.36
940.80	66.78	V	-27.3	1.36	0.0	-28.66	-13	15.66
1097.60	56.84	H	-57.2	1.10	6.10	-52.20	-13	39.20
1097.60	56.14	V	-59.2	1.10	6.10	-54.20	-13	41.20
1254.40	61.54	H	-52.8	1.00	7.30	-46.50	-13	33.50
1254.40	62.47	V	-52.8	1.00	7.30	-46.50	-13	33.50
1411.20	63.51	H	-50.8	0.90	7.80	-43.90	-13	30.90
1411.20	67.51	V	-47.5	0.90	7.80	-40.60	-13	27.60
1568.00	60.24	H	-54.1	1.50	8.60	-47.00	-13	34.00
1568.00	63.17	V	-51.7	1.50	8.60	-44.60	-13	31.60
1724.80	64.24	H	-49.9	1.50	8.80	-42.60	-13	29.60
1724.80	60.46	V	-54.3	1.50	8.80	-47.00	-13	34.00

Frequency (MHz)	Receiver Reading (dBm)	Polar (H/V)	Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi/dBd)			
157.425MHz								
314.85	57.80	H	-50.2	0.94	0.0	-51.14	-13	38.14
314.85	57.31	V	-47.9	0.94	0.0	-48.84	-13	35.84
472.28	56.24	H	-49.4	1.05	0.0	-50.45	-13	37.45
472.28	54.29	V	-46.7	1.05	0.0	-47.75	-13	34.75
629.70	50.28	H	-49.6	1.12	0.0	-50.72	-13	37.72
629.70	49.82	V	-48.1	1.12	0.0	-49.22	-13	36.22
787.13	58.29	H	-38.9	1.30	0.0	-40.20	-13	27.20
787.13	57.76	V	-40.2	1.30	0.0	-41.50	-13	28.50
944.55	66.13	H	-30.4	1.36	0.0	-31.76	-13	18.76
944.55	66.76	V	-27.3	1.36	0.0	-28.66	-13	15.66
1101.98	54.71	H	-59.3	1.10	6.10	-54.30	-13	41.30
1101.98	55.69	V	-59.7	1.10	6.10	-54.70	-13	41.70
1259.40	70.24	H	-44.1	1.00	7.30	-37.80	-13	24.80
1259.40	65.38	V	-49.9	1.00	7.30	-43.60	-13	30.60
1416.83	71.55	H	-42.8	0.90	7.80	-35.90	-13	22.90
1416.83	67.28	V	-47.7	0.90	7.80	-40.80	-13	27.80
1574.25	69.47	H	-44.9	1.50	8.60	-37.80	-13	24.80
1574.25	64.85	V	-50.0	1.50	8.60	-42.90	-13	29.90
1731.68	70.68	H	-43.5	1.50	8.80	-36.20	-13	23.20
1731.68	64.87	V	-49.9	1.50	8.80	-42.60	-13	29.60

Note 1: The unit of antenna gain is dBd for frequency below 1GHz and dBi for frequency above 1GHz.

Note 2:

Absolute Level = Substituted Level - Cable loss+ Antenna Gain

Margin = Limit -Absolute Level

FCC §80.217 - SUPPRESSION OF INTERFERENCE ABOARD SHIPS

Applicable Standard

FCC §80.217 Suppression of interference aboard ships:

(a) A voluntarily equipped ship station receiver must not cause harmful interference to any receiver required by statute or treaty.

(b) Deliver not more than the following amounts of power, to an artificial antenna having electrical characteristics equivalent to those of the average receiving antenna(s) use on shipboard:

Frequency of interfering emissions	Power to artificial antenna in microwatts	Power to artificial antenna in dBm
Below 30 MHz	400	-3.98
30 to 100 MHz	4,000	6.02
100 to 300 MHz	40,000	16.02
Over 300 MHz	400,000	26.02

Test Procedure

According to ANSI C63.26-2015 Section 5.7.4:

a) Set the spectrum analyzer start frequency to the lowest frequency generated by the EUT, without going below 9 kHz, and the stop frequency to the lower frequency covered by the measurements previously performed in 5.7.3. As an alternative, the stop frequency can be set to the value specified in 5.1.1, depending on the EUT operating range, if the resulting plot can clearly demonstrate compliance for all frequencies not addressed by the out-of-band emissions measurements performed as per 5.7.3.

b) When using an average power (rms) detector, ensure that the number of points in the sweep $\geq 2 \times (\text{span} / \text{RBW})$. This may require that the measurement range defined by the start and stop frequencies be subdivided, depending on the spectrum analyzer capabilities. This requirement does not apply to peak-detected power measurements. When average power is specified by the applicable regulation, a peak-detector can be utilized for preliminary measurements to accommodate wider frequency spans. Any emissions found in the preliminary measurement to exceed the applicable limit(s) shall be further examined using a power averaging (rms) detector with the minimum number of measurement points as defined above.

c) The sweep time should be set to auto-couple for performing peak-detector measurements. For measurements that use a power averaging (rms) detector, the sweep time shall be set as described for out-of-band emissions measurements in item d) of 5.7.3.

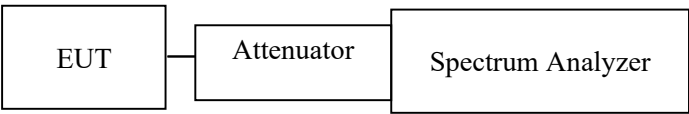
d) Identify and measure the highest spurious emission levels in each frequency range. It is not necessary to re-measure the out-of-band emissions as a part of this test. Record the frequencies and amplitudes corresponding to the measured emissions and capture the data plots.

e) Repeat step b) through step d) for the upper spurious emission frequency range if not already captured by a wide span measurement performed as per the alternative provided in step a). The upper frequency for this measurement is defined in 5.1.1 as a function of the EUT operating range.

f) Compare the results with the corresponding limit in the applicable regulation.

g) The test report shall include the data plots of the measuring instrument display and the measured data.

Block Diagram of Test Setup



Note: The Insertion loss of the RF cable, Attenuators was offset into the Spectrum Analyzer.

Test Data

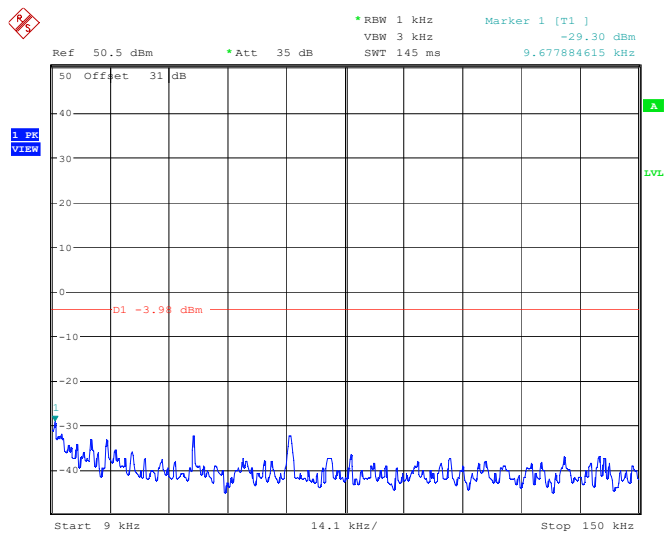
Environmental Conditions

Temperature:	26.3~27 °C
Relative Humidity:	53~55%
ATM Pressure:	100.7~101.0kPa

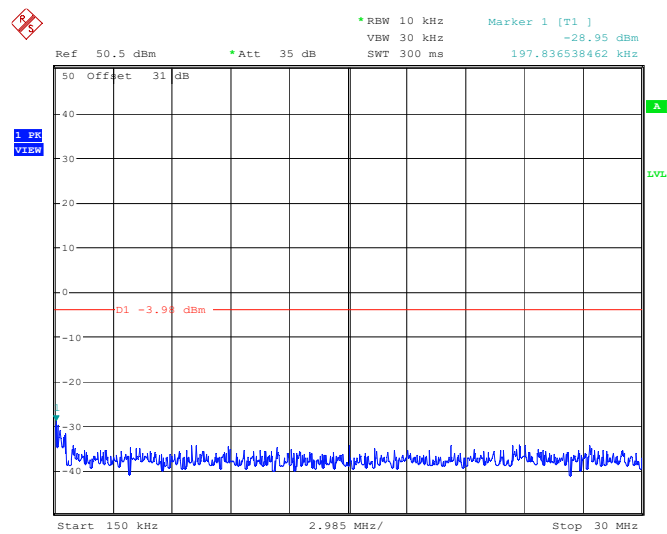
The testing was performed by Cheeb Huang from 2025-08-14 to 2025-09-10.

Test mode: Receiving

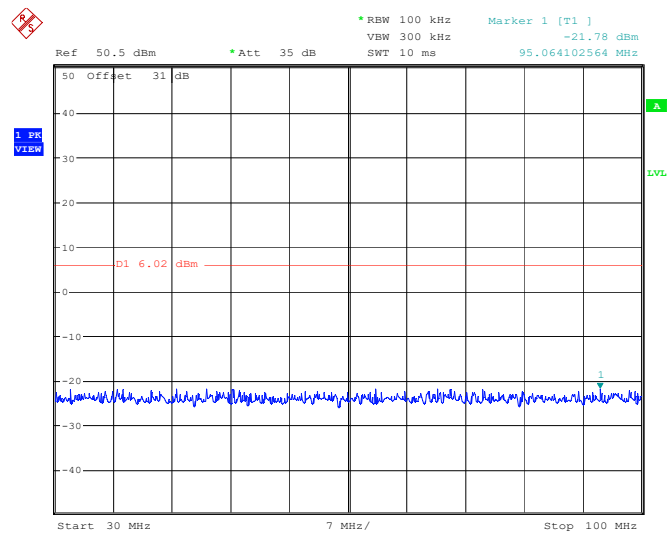
Test Result: Pass. Please refer to the following tables and plots.



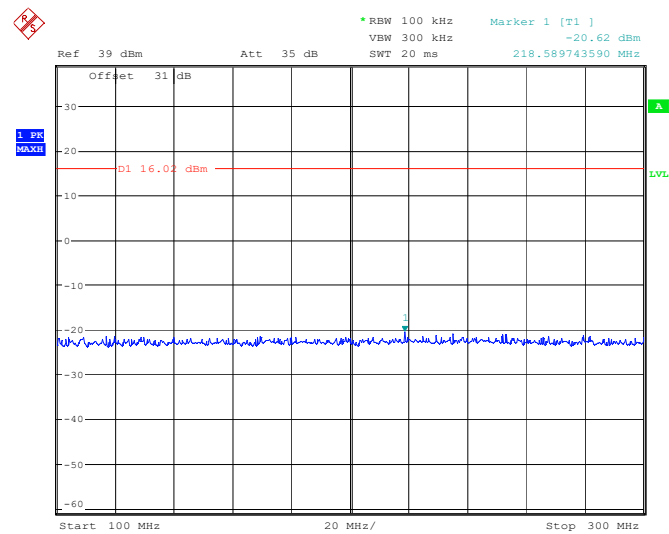
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Date: 14.AUG.2025 17:20:23



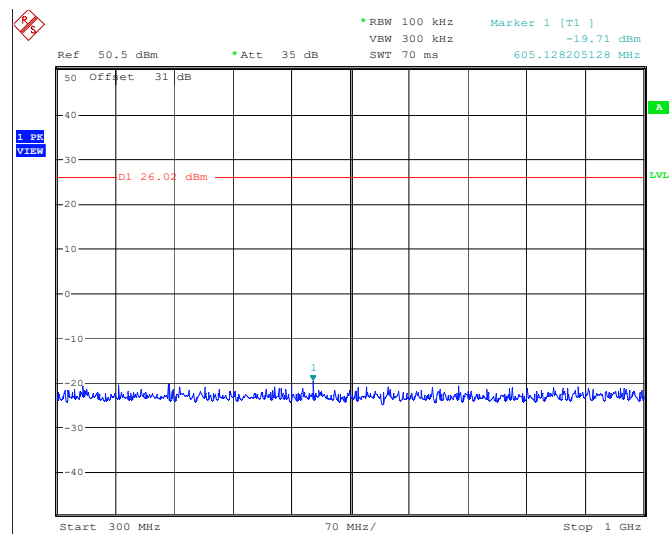
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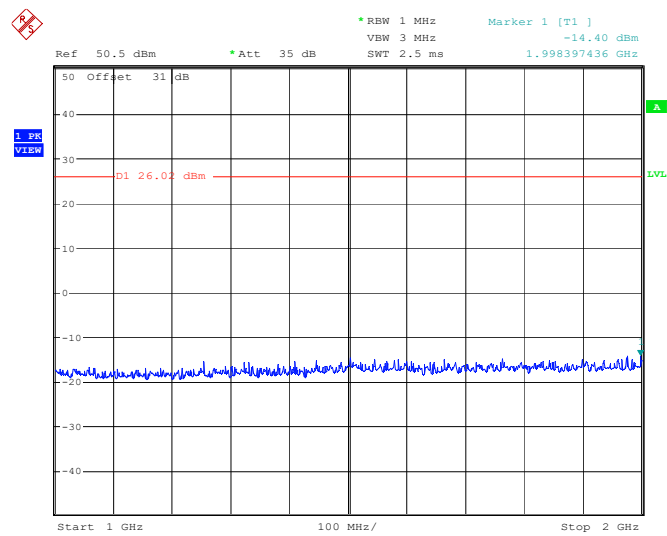
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Date: 14.AUG.2025 17:23:13



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Date: 10.SEP.2025 16:56:34



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Date: 14.AUG.2025 17:24:30



ProjectNo.:2501T61540E-RF Tester:Cheeb Huang
Date: 14.AUG.2025 17:25:07

EUT PHOTOGRAPHS

Please refer to the attachment 2501T61540E-RF-EXP External photo and 2501T61540E-RF-INP Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2501T61540E-RF-TSP Test Setup photo.

******* END OF REPORT *******